

DEPARTMENT OF THE ARMY
Huntington District Corps of Engineers
502 Eighth Street
Huntington, West Virginia 25701-2070

*CEORHR 385-2-3

CEORH-SO

Regulation
No. 385-2-3

18 September 1992

Safety
GENERAL POLICY

The word "he" when used in this regulation represents both the masculine and the feminine genders, unless otherwise specifically stated.

1. Purpose. To state the District's safety and occupational health policy and objectives, identify the varying safety and occupational health responsibilities of management and team members, and to prescribe procedures for administration of the District Safety & Occupational Health Management Program.

2. Applicability. This regulation applies to all activities performed by Government team members in accomplishing the District's mission.

3. References. AR 385 Series
ER 385 Series
EM 385-1-1 (Safety and Health Requirements Manual)
E.O. 12196
CFR, Title 29, 1910, 1926 & 1960

4. Policy and Objective. Safety will be given primary importance in planning and operating all District activities in order to protect team members against occupational injuries and illnesses and to protect the District against unnecessary property damage and reduced efficiency. The District's safety and occupational health objective is to achieve a year by year reduction in occupational injuries/illnesses and the amount of resultant property damage.

5. Responsibilities.

a. Staff Safety Assistance. The District's Safety & Occupational Health Office is responsible for managing the District's Safety & Occupational Health Program, providing safety and occupational health technical services, and evaluating the overall safety and occupational health activities in the District. Functions of the Safety &

Occupational Health Office are outlined in CEORH Pam 10-2-1 (District Functions), Appendix F.

b. Occupational Safety and Health Committee. The Occupational Safety and Health Committee provides advice to the District Commander with respect to his responsibilities under the District's occupational safety and health program. The committee will meet as called by the chairman. The functions of the committee are outlined in CEORH Pam 10-2-1, Appendix C, para. C-12.

c. District Managers. All District Managers or Team Leaders are responsible for accomplishing the District's safety and occupational health objective. District team leaders will constantly work toward the establishment and maintenance of safe and healthful working conditions for team members; the elimination of unsafe acts by team members; and the conscientious observance of all Department of the Army, Corps of Engineers, and District safety requirements.

6. Accountability. Management is responsible for measuring the effectiveness of safety performance of line team leaders, and is, therefore, held accountable. The District will use the following tools for measuring safety performance.

a. Accountability for Results. Management will fix accountability for results in the following areas:

(1) Accidents will be charged to the element, branch and project in which they occur.

(2) Performance appraisals of line team leaders will include an evaluation of their safety activities and results.

b. Accountability for Activities. In addition to results as a method of measurement, management will also measure

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the safety activities of its subordinate team leaders. This will require techniques to be developed by line management to perform the measurement. The activities to be considered are, but not limited to, the following:

(1) Safety meetings

- (2) Tool box meetings
- (3) Inspection results
- (4) Mishap investigation and reporting
- (5) Employee safety orientations
- (6) Job hazard analysis
- (7) Planned safety observations

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Commanding

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APPENDIX A Responsibilities

1. Functional Team Leaders. The safety and occupational health responsibilities for functional team leaders, i.e., chiefs of advisory and administrative staff elements and technical divisions, are as follows:

a. Manage the District's Safety & Occupational Health Program as it applies to his element. The team leader is also expected to take action to supplement the District's basic safety program according to the specific needs of his element.

b. Develop a functional element safety and occupational health policy which supplements the District's safety and occupational health policy. The policy must define the safety and occupational health responsibilities of the subordinate levels of organization management within the element. The element policy should also address the methods to be used for holding subordinate team leaders accountable for their safety performance. Accountability is addressed in paragraph 6 of the general policy statement and provides guidance for the items to be measured. Additionally, the element safety and occupational health policy must address the safety and occupational health standards or criteria which are to be used in accomplishing the element's work.

c. See that team leaders receive training delineating their safety responsibilities. Ideally, such training should be completed at the time the team leader assumes his supervisory responsibilities. At a minimum, such training should be completed within six months of the appointment date. The Army correspondence course, "Safety Management for the Supervisor," will be the minimum acceptable for this training.

d. Establish and manage a program for the initial safety orientation and job instruction of team members new to a hazardous position or occupation. The team leader is expected to see that the program is effectively carried out by first-line team leader under the direction of branch leaders.

e. Develop proper attitudes of safety-mindedness in his supervisory and non-supervisory team members. He is expected to convey a personal concern for team members safety and occupational health and to back up that concern by personal example.

f. Establish and personally conduct a program of regular safety meetings with his subordinate team leaders. The meeting should be a two-way communication for the discussion of safety and occupational health problems and

accident prevention activities. As needed, the meeting should stress such topics as recent mishaps, inspection findings, safety observations, progress in job safety analysis work, and similar matters. The responsibility may be shared with assistant team leaders.

g. Install and control a planned safety inspection program in his element. He should analyze the inspection requirements of the element, assign areas of inspection responsibility to his team leaders and see that the inspection program is carried out. In addition, he should conduct a formal inspection of his departmental areas at least semiannually, giving particular attention to fire, explosion and housekeeping hazards. He is also expected to develop a control procedure to assure that hazardous conditions are corrected.

h. Install and manage a job hazard analysis program in his element. He should approve jobs selected for analysis, establish schedules for the completion of job hazard analyses and review those completed by his subordinate team leaders. In addition, after such analyses are completed, he is responsible for seeing that they are used for team member instruction.

i. Establish team member personal protective equipment program in the elements and enforce District protective equipment requirements. The program should include determining requirements, indoctrinating and training team members, enforcing use of required equipment and the salvage and replacement of defective equipment.

j. Maintain safety discipline among team members, and see that subordinate team leaders apply approved measures of preventive and corrective discipline to ensure team member compliance with safety rules and regulations and recommended safe job procedures.

k. Personally participate in the investigation of disabling injury mishaps and major equipment damage mishaps. He should review, approve, and sign reports of such mishaps and direct whatever action is necessary to prevent recurrence of such mishaps. A follow-up procedure must be adopted to ensure that ordered corrective actions are carried out. He should also review, approve and sign nondisabling injury mishap reports that originate with his team leader. If it is felt that the corrective actions indicated on such reports are insufficient, or the report is poorly written, he should take steps to ensure adequate correction at the source.

l. Establish and implement a procedure for cumulative analysis of mishap report data in order to identify repetitive causes of mishaps within the element.

m. Cooperate with other elements where there is a mutual responsibility for the safety and occupational health of team members. Major repairs, maintenance or construction work should always be preceded by consultation and planning with the other elements.

2. Middle Team Leaders. The safety and occupational health responsibilities for middle team members, i.e., supervisory personnel in charge of activities between the functional team leader and the first-line team leader, are as follows:

a. Manage the District Safety & Occupational Health Program as it applies to his section. He is expected to take additional steps beyond the requirements of the program as required by the operations he leads.

b. Supplement the basic accident prevention training given to his team leader force with personal and group instruction as required. He must see that they have the know-how and skill necessary to carry out their assigned safety duties. He must also see that his team leaders understand the safety rules.

c. Conduct regular safety meetings with team leaders to keep them informed on safety and occupational health matters originating with higher management and to discuss safety and occupational health problems concerning his operations.

d. Participate in the investigation of all disabling injury and near-injury mishaps that occur to team members under his general supervision. He should review all mishap reports originating in his section and take steps if needed to upgrade the quality of mishap investigation and reporting. He is also responsible for following-up on corrective actions ordered to prevent recurrence of a mishap.

e. Control the departmental planned safety inspection program. This includes conducting planned inspections, reviewing safety inspection records, and spot-checking recently inspected facilities and equipment. In general, he is expected to prevent and, if necessary, correct unsafe conditions in his section.

f. Supervise the job hazard analysis program in his section. This includes scheduling and assigning job hazard analyses completion dates, reviewing drafts, getting job hazard analyses approved, and arranging for their

reproduction and distribution.

g. See that his team leaders give proper safety and occupational health orientation and job instructions to team members who have been assigned to a new job position.

h. See that his team leaders understand and apply approved methods for developing a sense of safety discipline in their team members. When necessary, he is expected to assume an active role in the handling of a disciplinary problem. He is also expected to correct any team member seen acting unsafely where there is an immediate danger. Where there is no such immediate danger, he should bring such matters to the attention of the appropriate team leader.

i. Administer the District's program of required personal protective equipment (see APP J) which includes seeing that his team leaders enforce the use of such equipment where required. He is also expected to correct any team member seen not using required equipment.

3. First-Line Team Leaders. The safety and occupational health responsibilities for first-line team leaders, i.e., individuals who directly supervise the activities of non-supervisory team members, are as follows:

a. Be responsible for the safety and occupational health of all team members regularly assigned to him. This means that he should be authorized to take any reasonable action required to prevent a mishap where an immediate danger exists. It also means he should be expected to carry out the responsibilities described hereafter.

b. Share the responsibility for team members not assigned to him who may be working in his area. He should acquaint himself with the nature of their work and see that they take precautions to protect area team members from hazards associated with their work. When such team members work without leadership of their own, the team leader is responsible for their adherence to safe working procedures and District safety rules.

c. See that assigned team members know District and element safety rules and regulations, established safe job procedures, and all major hazards associated with their work and work areas. Toward this objective, he is responsible for the initial safety and occupational health orientation and job instruction of team members newly assigned to job positions under his leadership.

d. Develop a cooperative safety attitude in his team members through the application of approved methods of preventive and corrective discipline. It is expected that he

will rely primarily on education and friendly persuasion plus setting the right example for team members.

e. Apply approved methods of preventive and corrective discipline to enforce compliance with District and element safety rules and approved safe working procedures. Under no circumstances are unsafe practices to be ordered or condoned.

f. Carefully prepare all job hazard analyses assigned to him. He is also expected to enforce the recommended safe job procedures resulting from job hazard analyses.

g. Conduct planned safety inspections in his assigned area of responsibility. He is expected to maintain approved inspection records. When confronted with an unsafe or unhealthful condition, he must order correction or report the condition together with his recommendations to his line team leaders. If necessary, he must take suitable temporary precautions to remedy unsafe or unhealthful conditions until higher leadership has acted to correct such conditions.

h. Maintain satisfactory standards of housekeeping in his assigned area.

i. See that injured team members receive prompt medical treatment, no matter how slight. He should prohibit self-treatment of injuries by team members and should not give such treatment except where emergency first aid is required. Accompany injured team member to the medical treatment facility and discuss light duty with treating medical personnel.

j. Investigate all mishaps brought to his attention. He is also expected to investigate potentially serious near-mishaps that occur in his area. Mishaps must be reported on the approved mishap report form, ENG Form 3394 (U.S.

Army Corps of Engineers Accident Investigation Report), in accordance with instructions contained in APP C.

k. Be alert for temporary or chronic physical or mental conditions of the team members under his supervision which may cause such team members to be safety risks. When such conditions are observed, the team leader must act in accordance with approved District procedure, contained in Section 25, paragraph 25-10, of HEDR 690-1-2.

l. See that team members use required personal protective equipment. Moreover, he is expected to inspect such equipment periodically for defects that diminish their protective function.

m. Know how to operate emergency equipment installed in area of responsibility. This includes the operation of fixed and portable fire fighting equipment, gas rescue equipment and other emergency equipment and procedures.

4. All Team Members. The safety and occupational health responsibilities of each team member are as follows:

a. Use and/or wear protective equipment and clothing as required for the job for protection of self, co-workers, and property from mishaps.

b. Observe safe working practices as established in EM 385-1-1 (Safety and Health Requirements Manual) and leaders instructions.

c. Promptly eliminate or report unsafe or unhealthful conditions, equipment, or practices.

d. Report all injuries and mishaps to team leader at time of occurrence.

APPENDIX B

Indoctrination, Instruction, and Training in Safety

1. Purpose. This appendix establishes procedures to ensure that all team members receive sufficient safety and occupational health instructions and training to enable them to perform their work in a safe manner.

2. References. EM 385-1-1 (Safety and Health Requirements Manual)

3. Indoctrination and Instruction.

a. Team leaders will provide all new team members with an initial CEORH Form 2681 (Safety Indoctrination For New Employees) (see p. B-3) to include:

- (1) Safety and occupational health requirements and practices.
- (2) Reporting of all accidents.
- (3) Obtaining first aid and medical treatment.
- (4) Responsibility for accident-free operations.

b. Team leaders will give all team members continuing instructions to enable them to conduct their work safely. They will provide special safety instructions to team members at the beginning of a new work assignment to cover the hazards that may be encountered.

4. Safety Meetings.

a. Team leaders will conduct a minimum of one 5-minute on-the-job safety meeting each week for all field employees of the Construction, Operations & Readiness and Engineering Divisions.

b. Supervisors at each field installation or office and District Office will hold a regularly scheduled safety meeting at least once each month for all of their team members. Topics discussed at these meetings should include specific sections of EM 385-1-1 (Safety and Health Requirements Manual).

5. Responsibilities.

a. Team leaders will take the actions necessary to ensure that their team members receive the required instruction and training.

b. Team leaders will maintain a record of scheduled monthly safety meetings, and will forward a copy to the Safety & Occupational Health Office.

6. Required Training.

a. Defensive Driving – All team members are required to successfully complete an approved defensive driving course prior to driving on official business. The National Safety Council four- and eight-hour instructor-taught courses for defensive driving are approved. Defensive driving certification must be renewed every three years.

Due to the difficulty of the logistics to schedule defensive driving courses for selected team members, special exemption from the instructor-taught courses may be requested from the Chief, CEORH-SO. The exemption will allow the substitution of the self-taught National Safety Council Defensive Driving Course for the instructor-taught course. Team members who take the self-taught course will complete the next available instructor-taught course and in NO case shall the self-taught course certification exceed six months.

b. First Aid/Cardiopulmonary Resuscitation (CPR)– At least two team members on each shift for field operating units shall be certified to administer first aid and CPR. First aid certification must be renewed every three years and CPR renewed annually. Annual completion of the newly revised American Red Cross 8-hour "Standard First Aid" course will fulfill the requirements for certification for first aid and CPR.

c. Hazard Communication– All team members who are occupationally exposed to hazardous or toxic chemicals/materials are required to initially complete a four-hour hazard communication training program and a short refresher training session annually. Specific requirements for this training are included in Appendix N, paragraph 5.d.

d. Hearing Conservation – All team members included in the Hearing Conservation Program shall receive annual training on hearing conservation. Specific requirements for this training are included in Appendix M, paragraph 10.

e. Respiratory Protection – All team members included in the Respiratory Protection Program will receive

initial training and refresher training at least annually. Supervisors or their representative who have operations requiring the use of respiratory protection, will be trained in respirator selection, proper use, fit test procedures, and inspection procedures. Specific requirements for respiratory protection training are listed in Appendix O, paragraph 16.

f. Team Leader Training. Team leaders shall receive at a minimum, training in the recognition and elimination of hazards, and the development of other required skills to implement the District Safety & Occupational Health Program at the working level. Specific requirements for team leader training are listed in Appendix A, para. 1.c.

g. Confined Space Entry – All team members who, during the course of their duties, enter confined spaces shall receive initial confined space entry training and annual refresher training. Specific requirements for confined space entry training are listed in Appendix Q, paragraph 12.

h. Control of Hazardous Energy – All team members exposed to lockout/tagout procedures shall be provided initial training on the procedures of the hazardous energy control program and retrained periodically. Specific requirements for controls of hazardous energy training are listed in Appendix Q, paragraph 14.

SAFETY INDOCTRINATION FOR NEW TEAM MEMBER

Name of Employee

Position Title

Element

Location

The following topics should be discussed by supervisors with new employees on their first day at work:

____ **1. Safety Attitude.** No job is so urgent that time cannot be taken to do it safely. Each employee is responsible for prevention of accidents to themselves, property, equipment, and fellow workers.

____ **2. Standard Job Procedures.** Discuss the employee's job duties and how they can be done safely. Job hazard analysis should be reviewed before any new job is started.

____ **3. Personal Protective Equipment.** Discuss how and when to use eye protection, hearing protection, hard hats, life jackets, life preservers, safety shoes, and other protective equipment.

____ **4. Emergency Procedures.** Discuss what to do in case of accident or fire. Point out location of fire extinguishers and how to operate. Point out emergency shut-offs (electric, gas, water, etc.).

____ **5. Motorized Vehicles and Equipment.** Discuss safe operation, seat belt usage and Defensive Driving requirements. Equipment should not be operated without training.

____ **6. Safety Awareness.** Safety awareness should be developed by every employee, and applied to every job done. Employees should consider it a duty to call unsafe acts or conditions to the attention of other employees and the supervisor.

____ **7. Safety Meetings.** Encourage employee to attend and actively participate in safety meetings.

____ **8. General Safety Requirements Manual** (E 385-1) Employee should be given a copy, if possible, or show the location of the office copy. Employee should become familiar with the General Safety Requirements, and should comply with the safety rules willingly.

____ **9. Reporting Accidents.** Employees should report any personal injury or property damage incident to their supervisor immediately.

____ **10. Housekeeping.** Keep work areas neat and clean, and replace tools and equipment in proper storage areas.

Signature of Employee
(To acknowledge that Safety Indoctrination
has been completed and understood.)

Date

Signature of Supervisor

Date

APPENDIX C

Accident Notification, Investigation, and Reporting

1. Purpose. The purpose of this appendix is to establish policy and procedures for the prompt notification of all serious accidents and ensure proper investigation and reporting procedures for all accidents. The causes of all accidents should be determined and corrective measures should be developed and taken to prevent recurrence.

2. References. AR 385-40 (Accident Reporting and Records)
OCE Supplement 1
EM 385-1-1 (Safety and Health Requirements Manual)

3. Policy. All accidents listed on Table C-1 occurring on premises under the jurisdiction of the Corps of Engineers or incident to a Corps of Engineers activity or operation will be investigated and reported on ENG Form 3394, in accordance with the procedures contained in paragraphs 5 and 6 below. This does not eliminate reporting of incidents required by other regulations/directives. Examples of premises considered as not being under the jurisdiction of the Huntington District for the purpose of accident reporting are:

a. Navigable waters beyond the arrival points at the Lock & Dam structures.

b. Muskingum Conservancy District lands.

c. State highways on project lands when no Government property is damaged.

4. Responsibilities.

a. All accidents occurring to Government and contractor team members, property or equipment must be reported as soon as possible. Government accidents will be reported to the team leader in charge of the team member or activity, and contractor accidents must be reported to the Contracting Officer's Representative.

b. Any team member who sustains a job related injury or occupational disease shall immediately report it to his/her team leader and complete the team member portion of a DOL Form CA-1, "Federal Employee's Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation," or DOL Form CA-2, "Notice of Occupational Disease and Claim for Compensation," whichever is applicable, and provide it to the immediate team leader as soon as possible.

c. Team Leader Responsibility:

(1) Adhere as closely as possible to applicable guidance in CEORHR 385-2-3 with regard to notification of the Safety and Occupational Health Office.

(2) The team leader shall provide the appropriate DOL blank form for (CA-1 or CA-2) to the injured/ill team member and accompany the team member to the medical treatment facility. Upon receipt of the completed form from the team member, the team leader shall complete the team leader portion of the form, fill out the receipt portion, detach the receipt and give it to the injured/ill team member. The CA-1 or CA-2 must be typed. NOTE: the CA-1's and CA-2's must be received by DOL not later than 10 days after receipt of the team member's written notice of injury.

(3) The investigation of accidents.

(4) Completing both verbal and written reports.

(5) Recommending and implementing final corrective action to prevent recurrence of these accidents.

5. Preparation of Accident Investigation Report, ENG Form 3394.

a. The team leader in charge of an activity which suffers an accident as in paragraph 3 and as listed on Table C-1 shall complete the USACE Accident Investigation Report, ENG Form 3394, September 1989, through block 15, make a copy when completed and attach a copy to the completed DOL form (CA-1 or CA-2). If a fatality occurs, the immediate team leader shall complete the DOL form CA-6, "Official Superior's Report of Employee's Death." The team leader shall forward the original, typed and completed DOL form (CA-1 or CA-2) and a copy of the USACE Accident Investigation Report (ENG 3394) to the Health Unit within 5 days following the receipt of notice of traumatic injury or occupational disease. The original of the completed ENG 3394 shall be forwarded with its instructions through management channels so it will be received by the Safety & Occupational Health Office within 5 days of occurrence of the accident or illness.

b. Review at the section or branch level is for the primary purpose of keeping this level of command informed of its safety performance. The secondary purpose is to assure that the accident report is complete. The report

should be reviewed, signed, dated (block 16), and sent forward no later than the second working day after receiving the report.

c. After review at the section or branch level, the report is to be forwarded to the division/element chief for review, signature, and date (block 17).

d. The report will then be forwarded no later than the second working day after receipt to the Safety and Occupational Health Office where the report will be analyzed and reviewed. Insufficient and/or incomplete reports will be returned to the division/element chief for correction.

e. The Safety and Occupational Health Office will forward the completed reports to the District Engineer for approval.

f. Each of the above will have an opportunity to make comments on the report regarding corrective actions, etc.

g. When a contractor team member sustains an injury or occupational disease, the contractor or contractor's representative shall notify the Contracting Office Representative (COR) immediately. The COR will furnish the required USACE Accident Investigation Report, ENG 3394, complete with instructions and example (p. C-10) to the contractor. The contractor or his/her representative shall complete the ENG 3394 through block 15, sign, date and return to the COR within 2 days of the occurrence of the injury or illness. The COR will review for accuracy/completeness, sign block 15c and date 15d. NOTE: Contractors do not use DOL form CA-1 or CA-2. All other reporting procedures remain the same as instructed for Corps team members.

6. Notification and Reporting Procedures.

a. The District Safety and Occupational Health Office will be notified immediately by telephone of all accidents covered in column 1, Table C-1. Notification during non-duty working hours will be accomplished through procedures outlined in ORHR 500-2-15, Policy for Reporting Incidents-Accidents-Unusual Occurrences.

b. The District Safety and Occupational Health Office will be notified as soon as possible on the day of the accident during duty hours or, if after duty hours, notification will be made promptly the next work day for all accidents covered in column 2, Table C-1.

c. All accidents covered in column 3, Table C-1, will be reported on ENG Form 3394, dated September 1989, as delineated in paragraph 5.

7. Pre-Accident Plan.

a. *Alarm System.* Each field installation shall have an accident alarm system. The alarm may be a whistle, horn, or fire alarm. If a whistle or horn is utilized, a predetermined series of blasts will be designated as the emergency signal. Radio or telephone communication will be used on remote work sites.

b. *Accident Rescue Plan.* Each field installation shall have an accident rescue plan which shall include:

(1) Emergency telephone numbers including the home telephone numbers of the chain of command and the District Safety Office posted at all telephones.

(2) Team members trained in CPR and first aid on each work shift.

(3) Pre-accident coordination with appropriate emergency service provided such as local rescue and fire services, police, hospital, coroner, etc.

c. *Training.* All team members will be instructed to take the following procedures in the event of an occurrence of an accident:

(1) Attend to the injured.

(2) Perform necessary action required to prevent further damage/injury.

(3) Immediately notify team leader in charge and appropriate emergency services.

(4) Do not alter accident scene. In the event of a severe accident, secure the accident scene.

d. *Appointment of Board of Investigation (BOI).* Board of Investigation will be appointed by District Commander in the event of the occurrence of:

(1) Class A & B Accidents (except public accidents).

(2) Class C Accidents which result in \$100,000 or greater property damage.

(3) Any accident determined necessary by Chief, Corps of Engineers Safety Office, division or laboratory chief, Safety & Occupational Health Office, or District Commander.

Commander appoints, on orders, a three-member Board of Investigation, including the chairman, with Safety & Occupational Health Office input. Safety & Occupational Health Office and Office of Counsel serve as technical advisors. Board will consist of individuals who have expertise in discipline of accident circumstances. The Chairman of the board members will not be selected from the element incurring the accident, and members will be screened to ensure no member of the board has an interest in the accident that may bias the outcome of the investigation. The board chairman will preferably be a GS-13 or higher graded team member. Members from the organization experiencing the accident may be designated as advisors (non-voting) to facilitate the investigation of the accident. Members should have knowledge of accident investigation techniques and preferably experience serving on Board of Investigation. Appointment of board should be immediate. Board should be provided list of objectives to accomplish. Board of Investigation report shall be attached to ENG Form 3394 and forwarded through channels within 45 days to CESO. In the event a Board of Investigation is formed, the accident scene team leader will secure the accident scene. The Board of Investigation shall have authority to contract an outside expert to assist with the investigation where warranted. Board members shall be provided open-ended travel orders which shall include provision for rental vehicles, excess baggage, purchase of material and supplies, and consulting fee authorization.

e. Instructions to Government Team Members Who Witness or Immediately Respond to Accident Resulting in: fatality, \$100,000 or greater property damage, injuries sustained by five or more persons, or as directed by District Commander.

- (1) Attend to injured and notify emergency response personnel.
- (2) Perform necessary action required to prevent further damage/injury.
- (3) Don't alter accident scene.
- (4) Immediately notify Safety & Occupational Health Office.
- (5) Identify all principal witnesses.

(6) Advise witnesses not to discuss accident among themselves.

(7) Await further instructions.

f. Instructions to Board of Investigation.

(1) Proceed as directed to accident site and meet with the pre-selected point-of-contact.

(2) Thoroughly investigate the accident and provide the following information, as applicable:

(a) License number, serial number, model number, date of manufacture, operator's manual, maintenance records, and condition of equipment.

(b) Name, address and phone number of witnesses.

(c) Sketches, photographs, and measurements.

(d) Pertinent removable evidence should be labeled and preserved.

(3) The Board should ensure that applicable equipment, listed in paragraph k, necessary to conduct the investigation is taken to the accident site.

(4) Interview and record statements of all witnesses and victims separately.

(5) Analyze data obtained to determine actual direct and indirect causes of the accident.

(6) Perform followup investigation as necessary.

(7) Develop draft report. The reports shall not be written with names of witnesses, but with their job titles and witness numbers.

(8) Review report.

(9) Finalize report.

(10) Safety & Occupational Health Office will submit report with recommendations to the Commander for signature.

(11) Report must include when and how recommendations will be implemented and names of team members responsible for implementations.

g. Action to be taken by Safety & Occupational Health Office:

(1) Notify District Commander, Division Office, USACE, and USASC.

(2) Complete and transmit Report of Serious Accident.

(3) Notify Board of Investigation members of their appointment.

(4) Notify Public Affairs Office, if necessary. All media inquiries shall be directed to the Public Affairs Office.

(5) Complete the Commander's Board of Investigation appointment letter.

(6) Notify Government team members at accident site of Board of Investigation members arrival date/time.

(7) Ensure that a point-of-contact has been identified by name to assist the Board of Investigation at the scene of the accident.

h. Board Report Format. The report should be made up of, as a minimum:

(1) A copy of the Board of Investigation appointment letter.

(2) An overview of the accident.

(3) Findings.

(4) Direct and indirect causes.

(5) Conclusions.

(6) Recommendations.

(7) Synopsis of witness statements.

(8) Photographs.

(9) Copy of ENG Form 3394.

(10) Other pertinent materials.

i. Command Review. The Commander shall review the Board of Investigation report and comment in a cover letter through command channels to the Chief of Engineers.

The Commander should not influence or change the Board of Investigation report.

j. Abstract Report of Accident. The Safety & Occupational Health Office will provide an abstract report of the accident to all Corps Field Operating Authority's via electronic mail.

k. Equipment List for Board of Investigation (as appropriate):

(1) Suitable clothing.

(2) First aid kit.

(3) Magnetic compass.

(4) 50' - 100' steel measuring tape.

(5) Protractor with scale.

(6) Maps and/or charts.

(7) Clipboard, notebook, pens and pencils.

(8) Sample containers.

(9) Shipping tags.

(10) Flashlights.

(11) Chalk, grease pencils, gummed labels, etc.

(12) Heavy twine.

(13) Magnifying glass.

(14) ENG Forms 3394.

(15) Appropriate equipment & operating manuals.

(16) Tape recorder & tapes.

(17) Cameras & film.

(18) Each Board of Investigation member will be equipped with personal protective equipment appropriate for accident site.

8. Sample Accident Reports. Examples of completed United States Army Corps of Engineers Accident Investigation Reports (ENG Form 3394) are provided for information purposes.

TABLE C-1
Accidents To Be Reported

	<u>1</u>	<u>2</u>	<u>3</u>
<i>a.</i> Fatalities or Permanent total disabling injuries to or involving on-duty military, Government civilian, or contractor personnel; also off-duty, if on premises or incident to a Corps of Engineers activity or operation.	X		X
<i>b.</i> Accidents in which 5 or more persons are hospitalized.	X		X
<i>c.</i> Damage of \$100,000 or more to Corps of Engineers' or contractor's property and/or equipment.	X		X
<i>d.</i> Any accident regardless of the consequences, if it is suspected it will result in unfavorable criticism of the Corps or the Army, or provoke questions at the Washington level.	X		X
<i>e.</i> Contractor employee lost-time injuries.		X	X
<i>f.</i> Government employee lost-time injuries.		X	X
<i>g.</i> Property damage, motor vehicle and navigation accidents (\$2,000 or more damage).		X	X
<i>h.</i> Public fatalities.		X	X
<i>i.</i> Any government employee accidental injury or illness which results in medical treatment other than first aid.		X	X

- (1) Notify District Safety & Occupational Health Office immediately by telephone. For notification during non-duty hours see ORHR 500-2-15.
- (2) Notify District Safety & Occupational Health Office as soon as possible on the day of the accident or, if after duty hours, promptly the next work day.
- (3) Accidents will be reported on ENG Form 3394, as noted in Appendix C, paragraph 5.

(For Safety Staff only)		REPORT NO.	ENTRY CODE	UNITED STATES ARMY CORPS OF ENGINEERS ACCIDENT INVESTIGATION REPORT (For Use of this Form See Attached Instructions and USACE Suppl to AR 385-40)		REQUIREMENT CONTROL SYMBOL: CEEC-S-8(R2)
1. ACCIDENT CLASSIFICATION						
PERSONNEL CLASSIFICATION		INJURY/ILLNESS/FATAL		PROPERTY DAMAGE		MOTOR VEHICLE INVOLVED
GOVERNMENT <input type="checkbox"/> CIVILIAN <input type="checkbox"/> MILITARY		<input type="checkbox"/>		<input type="checkbox"/> FIRE INVOLVED <input type="checkbox"/> OTHER		<input type="checkbox"/>
<input type="checkbox"/> CONTRACTOR		<input type="checkbox"/>		<input type="checkbox"/> FIRE INVOLVED <input type="checkbox"/> OTHER		<input type="checkbox"/>
<input type="checkbox"/> PUBLIC		<input type="checkbox"/> FATAL <input checked="" type="checkbox"/> OTHER				<input type="checkbox"/>
2. PERSONAL DATA						
a. NAME (Last, First, MI) SKIPPER, I. M.		b. AGE 40	c. SEX <input checked="" type="checkbox"/> MALE <input type="checkbox"/> FEMALE	d. SOCIAL SECURITY NUMBER ____ / ____ / ____		e. GRADE N/A
f. JOB SERIES/TITLE PILOT		g. DUTY STATUS AT TIME OF ACCIDENT <input checked="" type="checkbox"/> ON DUTY <input type="checkbox"/> TTY <input type="checkbox"/> OFF DUTY		h. EMPLOYMENT STATUS AT TIME OF ACCIDENT <input type="checkbox"/> ARMY ACTIVE <input type="checkbox"/> ARMY RESERVE <input type="checkbox"/> VOLUNTEER <input type="checkbox"/> PERMANENT <input type="checkbox"/> FOREIGN NATIONAL <input type="checkbox"/> SEASONAL <input type="checkbox"/> TEMPORARY <input type="checkbox"/> STUDENT <input type="checkbox"/> OTHER (Specify) N/A		
3. GENERAL INFORMATION						
a. DATE OF ACCIDENT (month/day/year) 04/20 / 85		b. TIME OF ACCIDENT (Military time) 0600		c. EXACT LOCATION OF ACCIDENT MAIN LOCK CHAMBER GALLIPOLIS LOCKS & DAM, MASON CO., WV		d. CONTRACTOR'S NAME (1) PRIME (2) SUBCONTRACTOR
e. CONTRACT NUMBER <input type="checkbox"/> CIVIL WORKS <input type="checkbox"/> MILITARY <input type="checkbox"/> OTHER (Specify)		f. TYPE OF CONTRACT <input type="checkbox"/> CONSTRUCTION <input type="checkbox"/> SERVICE <input type="checkbox"/> MAINT <input type="checkbox"/> DEMOLITION <input type="checkbox"/> OTHER (Specify)		g. HAZARDOUS/TOXIC WASTE ACTIVITY <input type="checkbox"/> SUPERFUND <input type="checkbox"/> DUMP <input type="checkbox"/> HAP <input type="checkbox"/> OTHER (Specify)		
4. CONSTRUCTION ACTIVITIES (fill in line and corresponding code number in box - see instructions)						
a. CONSTRUCTION ACTIVITY		b. TYPE OF EQUIPMENT		(CODE) #		
5. INJURY/ILLNESS INFORMATION (fill in line and corresponding code number in box - see instructions)						
a. SEVERITY OF ILLNESS / INJURY		(CODE) #		b. ESTIMATED DAYS LOST	c. ESTIMATED DAYS HOSPITALIZED	d. ESTIMATED DAYS RESTRICTED DUTY
e. BODY PART AFFECTED PRIMARY SECONDARY		(CODE) #		f. TYPE AND SOURCE OF INJURY/ILLNESS TYPE (CODE) # SOURCE (CODE) #		
g. NATURE OF ILLNESS / INJURY		(CODE) #				
6. PUBLIC FATALITY (fill in line and corresponding code number in box - see instructions)						
a. ACTIVITY AT TIME OF ACCIDENT		(CODE) #		b. PERSONAL FLOATATION DEVICE USED? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
7. MOTOR VEHICLE ACCIDENT						
a. TYPE OF VEHICLE <input type="checkbox"/> PICKUP/VAN <input type="checkbox"/> AUTOMOBILE <input type="checkbox"/> TRUCK <input type="checkbox"/> OTHER (Specify)		b. TYPE OF COLLISION <input type="checkbox"/> SIDE SWALE <input type="checkbox"/> HEAD ON <input type="checkbox"/> REAR END <input type="checkbox"/> HEAD ON <input type="checkbox"/> ROLL OVER <input type="checkbox"/> BACKING <input type="checkbox"/> OTHER (Specify)		c. SEAT BELTS USED NOT USED NOT AVAILABLE (1) FRONT SEAT (2) REAR SEAT		
8. PROPERTY/MATERIAL INVOLVED						
a. NAME OF ITEM		b. OWNER/OWNER		c. \$ AMOUNT OF DAMAGE		
(1) Main Chamber Gate Leaf		U.S. Army Corps of Engineers		\$15,000		
(2) Barge GTC 1054		Non-Army		\$ 1,000		
(3)						
9. VESSEL / FLOATING PLANT ACCIDENT (fill in line and corresponding code number in box from list - see instructions)						
a. TYPE OF VESSEL / FLOATING PLANT		(CODE) #		b. TYPE OF COLLISION/SHIP (CODE) #		
Barge		4		Upper lock gates 3		
10. ACCIDENT DESCRIPTION (Use additional paper, if necessary)						
The motor vessel LINDA SUE was approaching the main lock chamber downbound with 6 empty barges in tow. The vessel approached the main lock chamber in a misaligned manner, stern out. The head of the tow then struck the upper, landward main chamber gate leaf. 6 gate timbers & 2 main structured members were severely damaged. The head log of barge GTC1054 suffered minor damage. The weather was a factor in that it was foggy and rainy.						

11. CAUSAL FACTOR(S) (Read Instruction Before Completing)			
<p>a. (Explain YES answers in item 13)</p> <p>DESIGN: Was design of facility, workplace or equipment a factor? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p>INSPECTION/MAINTENANCE: Were inspection & maintenance procedures a factor? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p>PERSON'S PHYSICAL CONDITION: In your opinion, was the physical condition of the person a factor? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p>OPERATING PROCEDURES: Were operating procedures a factor? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p>JOB PRACTICES: Were any job safety/health practices not followed when the accident occurred? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/></p> <p>HUMAN FACTORS: Did any human factors such as, size or strength of person, etc., contribute to accident? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p>ENVIRONMENTAL FACTORS: Did heat, cold, dust, sun, glare, etc., contribute to the accident? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/></p>	<p>a. (CONTINUED)</p> <p>CHEMICAL AND PHYSICAL AGENT FACTORS: Did exposure to chemical agents, such as dust, fumes, mists, vapors or physical agents, such as, noise, radiation, etc., contribute to accident? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p>OFFICE FACTORS: Did office setting such as, filing office furniture, carrying, stooping, etc., contribute to the accident? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p>SUPPORT FACTORS: Were inappropriate tools/resources provided to properly perform the activity/task? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p>PERSONAL PROTECTIVE EQUIPMENT: Did the improper selection, use or maintenance of personal protective equipment contribute to the accident? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p>DRUGS/ALCOHOL: In your opinion, was drugs or alcohol a factor to the accident? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p>b. WAS A WRITTEN JOB/ACTIVITY HAZARD ANALYSIS COMPLETED FOR TASK BEING PERFORMED AT TIME OF ACCIDENT?</p> <p style="text-align: center;"><input type="checkbox"/> YES (If yes, attach a copy) <input checked="" type="checkbox"/> NO</p>		
12. TRAINING			
<p>a. WAS PERSON TRAINED TO PERFORM ACTIVITY/TASK?</p> <p style="text-align: center;"><input type="checkbox"/> YES <input type="checkbox"/> NO</p>	<p>b. TYPE OF TRAINING</p> <p style="text-align: center;"><input type="checkbox"/> CLASSROOM <input type="checkbox"/> ON JOB</p>	<p>c. DATE OF MOST RECENT FORMAL TRAINING.</p> <p style="text-align: center;">/ / (Month) (Day) (Year)</p>	
13. FULLY EXPLAIN WHAT ALLOWED OR CAUSED THE ACCIDENT; INCLUDE DIRECT AND INDIRECT CAUSES (See instruction for definition of direct and indirect causes) (Use additional paper, if necessary)			
<p>a. DIRECT CAUSE Mr. Skipper misjudged the clearance and rate of closure between M/V LINDA SUE and the main lock chamber.</p> <p>b. INDIRECT CAUSE(S) Fog and Rain</p>			
14. ACTION(S) TAKEN, ANTICIPATED OR RECOMMENDED TO ELIMINATE CAUSE(S).			
<p>DESCRIBE FULLY:</p> <p>Continue to instruct vessel operators to align the tow properly. Towing Company will be billed for costs to repair damage.</p>			
15. (See instruction for completion of this block)			
<p>a. BEGINNING (Month/Day/Year) / /</p>	<p>b. ANTICIPATED COMPLETION (Month/Day/Year) / /</p>	<p>c. SIGNATURE AND TITLE OF SUPERVISOR COMPLETING REPORT</p> <p>CORPS (Lockmaster)</p>	
		<p>d. DATE (Mo/Da/Yr)</p> <p>04 / 20 / 85</p>	<p>e. ORGANIZATION IDENTIFIER (Div, Br, Sect)</p> <p>Operation & Readiness Div. Navigation Branch Gallipolis L/D</p>
<p>f. OFFICE SYMBOL</p> <p>CEORH-CD-GAL</p>			
16. MANAGEMENT REVIEW (1st)			
<p>a. <input type="checkbox"/> CONCUR b. <input type="checkbox"/> NON CONCUR c. COMMENTS</p>			
SIGNATURE		TITLE	
		(BRANCH CHIEF)	
DATE			
17. MANAGEMENT REVIEW (2nd - Chief Operations, Construction, Engineering, etc.)			
<p>a. <input type="checkbox"/> CONCUR b. <input type="checkbox"/> NON CONCUR c. COMMENTS</p>			
SIGNATURE		TITLE	
		(DIVISION CHIEF)	
DATE			
18. SAFETY AND OCCUPATIONAL HEALTH OFFICE REVIEW			
<p>a. <input type="checkbox"/> CONCUR b. <input type="checkbox"/> NON CONCUR c. ADDITIONAL ACTIONS/COMMENTS:</p>			
SIGNATURE		TITLE	
		Chief, CEORH-SO	
DATE			
19. COMMAND APPROVAL			
COMMENTS			
COMMANDER SIGNATURE			DATE
JAMES R. VAN EPPS, COL., CE, Commanding			

(Reverse of ENG Form 3394)

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(For Safety Staff only)		REPORT NO.	ENGINE CODE	UNITED STATES ARMY CORPS OF ENGINEERS ACCIDENT INVESTIGATION REPORT (For Use of this Form See Attached Instructions and USACE Suppl to AR 385-40)		REQUIREMENT CONTROL SYMBOL: CEEC-S-8(R2)
1. ACCIDENT CLASSIFICATION						
PERSONNEL CLASSIFICATION		INJURY/ILLNESS/FATAL		PROPERTY DAMAGE		MOTOR VEHICLE INVOLVED
<input type="checkbox"/> GOVERNMENT <input type="checkbox"/> CIVILIAN <input type="checkbox"/> MILITARY <input type="checkbox"/> CONTRACTOR <input checked="" type="checkbox"/> PUBLIC		<input type="checkbox"/> FATAL <input type="checkbox"/> OTHER		<input type="checkbox"/> FIRE INVOLVED <input type="checkbox"/> OTHER <input type="checkbox"/> FIRE INVOLVED <input type="checkbox"/> OTHER		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2. PERSONAL DATA						
a. NAME (Last, First, MI) SMITH, JANE R.		b. AGE 16	c. SEX <input type="checkbox"/> MALE <input checked="" type="checkbox"/> FEMALE	d. SOCIAL SECURITY NUMBER N/A		e. GRADE
f. JOB SERIES/TITLE N/A		g. DUTY STATUS AT TIME OF ACCIDENT <input type="checkbox"/> ON DUTY <input type="checkbox"/> IDY <input type="checkbox"/> OFF DUTY		h. EMPLOYMENT STATUS AT TIME OF ACCIDENT <input type="checkbox"/> ARMY ACTIVE <input type="checkbox"/> ARMY RESERVE <input type="checkbox"/> VOLUNTEER <input type="checkbox"/> PERMANENT <input type="checkbox"/> FOREIGN NATIONAL <input type="checkbox"/> SEASONAL <input type="checkbox"/> TEMPORARY <input type="checkbox"/> STUDENT <input type="checkbox"/> OTHER (Specify)		
3. GENERAL INFORMATION						
a. DATE OF ACCIDENT (month/day/year) 06/14/85	b. TIME OF ACCIDENT (Military time) 1600	c. EXACT LOCATION OF ACCIDENT SUTTON LAKE, BRAXTON CO., WV			d. CONTRACTOR'S NAME (1) PRIME: (2) SUBCONTRACTOR:	
e. CONTRACT NUMBER <input type="checkbox"/> CIVIL WORKS <input type="checkbox"/> MILITARY <input type="checkbox"/> OTHER (Specify)		f. TYPE OF CONTRACT <input type="checkbox"/> CONSTRUCTION <input type="checkbox"/> SERVICE <input type="checkbox"/> MAINT <input type="checkbox"/> DREDGE <input type="checkbox"/> OTHER (Specify)		g. HAZARDOUS/TOXIC WASTE ACTIVITY <input type="checkbox"/> SUPERFUND <input type="checkbox"/> DEEP <input type="checkbox"/> HUP <input type="checkbox"/> OTHER (Specify)		
4. CONSTRUCTION ACTIVITIES (fill in line and corresponding code number in box - see instructions)						
a. CONSTRUCTION ACTIVITY		b. TYPE OF CONSTRUCTION EQUIPMENT		c. CODE		
5. INJURY/ILLNESS INFORMATION (fill in line and corresponding code number in box - see instructions)						
a. SEVERITY OF ILLNESS / INJURY FATALITY		b. ESTIMATED DAYS, RESTRICTED DUTY FAT N/A N/A N/A		c. ESTIMATED DAYS, RESTRICTED DUTY N/A		
d. BODY PART AFFECTED PRIMARY Both Lungs		e. TYPE AND SOURCE OF INJURY/ILLNESS TYPE Inhaled		f. SOURCE Water		
g. NATURE OF ILLNESS / INJURY Traumatic Injury-Drowning		h. TYPE AND SOURCE OF INJURY/ILLNESS TYPE Inhaled		f. SOURCE Water		
6. PUBLIC FATALITY (fill in line and corresponding code number in box - see instructions)						
a. ACTIVITY AT TIME OF ACCIDENT Boating		b. PERSONAL FLOATION DEVICE (PFD) USED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A				
7. MOTOR VEHICLE ACCIDENT						
a. TYPE OF VEHICLE <input type="checkbox"/> PICKUP/VAN <input type="checkbox"/> AUTOMOBILE <input type="checkbox"/> TRUCK <input type="checkbox"/> OTHER (Specify)		b. TYPE OF COLLISION <input type="checkbox"/> SIDE SWAYL <input type="checkbox"/> HEAD ON <input type="checkbox"/> REAR END <input type="checkbox"/> UNDERPASS <input type="checkbox"/> FRONT OVER <input type="checkbox"/> BACKING <input type="checkbox"/> OTHER (Specify)		c. SEAT BELTS USED? NOT USED NOT AVAILABLE (1) FRONT SEAT (2) REAR SEAT		
8. PROPERTY/MATERIAL INVOLVED						
a. NAME OF ITEM		b. (OWNERS)		c. \$ AMOUNT OF DAMAGE		
(1)						
(2)						
(3)						
9. VESSEL / FLOATING PLANT ACCIDENT (fill in line and corresponding code number in box - see instructions)						
a. TYPE OF VESSEL / FLOATING PLANT		b. TYPE OF COLLISION/MISHAP		c. CODE		
10. ACCIDENT DESCRIPTION (Use additional paper, if necessary)						
<p>Ms. Smith was a passenger in a pleasure boat operated by James R. Smith. Mr. Smith made a very sharp turn causing Ms. Smith to fall overboard. Ms. Smith was not wearing a lifejacket & could not swim. Efforts to rescue Ms. Smith were unsuccessful. Witnesses to the accident were: Paul R. Smith & Louise Smith. The victim's body was recovered by the Braxton County Rescue Squad at 1800 hours, 14 June 1985. Mr. James R. Smith had consumed alcoholic beverages just prior to the accident.</p>						

11. CAUSAL FACTOR(S) (Read instruction Before Completing)			
<p>a. (Explain YES answers in item 13)</p> <p>DESIGN: Was design of facility, workplace or equipment a factor? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>INSPECTION/MAINTENANCE: Were inspection & maintenance procedures a factor? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>PERSON'S PHYSICAL CONDITION: In your opinion, was the physical condition of the person a factor? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>OPERATING PROCEDURES: Were operating procedures a factor? YES NO <input checked="" type="checkbox"/> <input type="checkbox"/></p> <p>JOB PRACTICES: Were any job safety/health practices not followed when the accident occurred? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>HUMAN FACTORS: Did any human factors such as, size or strength of person, etc., contribute to accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>ENVIRONMENTAL FACTORS: Did heat, cold, dust, sun, glare, etc., contribute to the accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>b. (CONTINUED)</p> <p>CHEMICAL AND PHYSICAL AGENT FACTORS: Did exposure to chemical agents, such as dust, fumes, mists, vapors or physical agents, such as, noise, radiation, etc., contribute to accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>OFFICE FACTORS: Did office setting such as, lifting office furniture, carrying, slopping, etc., contribute to the accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>SUPPORT FACTORS: Were inappropriate tools/resources provided to properly perform the activity/task? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>PERSONAL PROTECTIVE EQUIPMENT: Did the improper selection, use or maintenance of personal protective equipment contribute to the accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>DRUGS/ALCOHOL: In your opinion, was drugs or alcohol a factor to the accident? YES NO <input checked="" type="checkbox"/> <input type="checkbox"/></p> <p>c. WAS A WRITTEN JOB/ACTIVITY HAZARD ANALYSIS COMPLETED FOR TASK BEING PERFORMED AT TIME OF ACCIDENT? <input type="checkbox"/> YES (If yes, attach a copy) <input type="checkbox"/> NO</p>		
12. TRAINING			
<p>a. WAS PERSON TRAINED TO PERFORM ACTIVITY/TASK? <input type="checkbox"/> YES <input type="checkbox"/> NO</p>	<p>b. TYPE OF TRAINING: <input type="checkbox"/> CLASSROOM <input type="checkbox"/> ON JOB</p>	<p>c. DATE OF MOST RECENT FORMAL TRAINING: / / (Month) (Day) (Year)</p>	
13. FULLY EXPLAIN WHAT ALLOWED OR CAUSED THE ACCIDENT; INCLUDE DIRECT AND INDIRECT CAUSES (See instruction for definition of direct and indirect causes.) (Use additional paper, if necessary)			
<p>a. DIRECT CAUSE Ms. Smith's father failed to maintain control of boat in which she was a passenger.</p> <p>b. INDIRECT CAUSE(S) Ms. Smith could not swim and was not wearing a life jacket. Mr. Smith may have been under the influence of alcohol.</p>			
14. ACTION(S) TAKEN, ANTICIPATED OR RECOMMENDED TO ELIMINATE CAUSE(S).			
<p>DESCRIBE FULLY: Continue current policy of stressing use of life jackets the hazards of combining alcohol consumption with water activities. Continue reinforcing water safety through public education programs and posting of brochures, etc. on bulletin boards.</p>			
15. REPORTER ACTIONS IDENTIFIED IN BLOCK			
<p>a. BEGINNING (Month/Day/Year) 06 / 14 / 85</p>	<p>b. ANTICIPATED COMPLETION (Month/Day/Year) / /</p>		
<p>c. SIGNATURE AND TITLE OF SUPERVISOR COMPLETING REPORT CORPS _____ CONTRACTOR _____</p>	<p>d. DATE (Mo/Du/Yr) ____ / ____ / ____</p>	<p>e. ORGANIZATION IDENTIFIER (Div, Br, Sect) Operation & Readiness Div. Natural Resource Mgmt. Br. Sutton Lake</p>	<p>f. OFFICE SYMBOL CEORH-OR-SUT</p>
16. MANAGEMENT REVIEW (1st)			
<p>a. <input type="checkbox"/> CONCUR b. <input type="checkbox"/> NON CONCUR c. COMMENTS</p>			
SIGNATURE	TITLE (Branch Chief)	DATE	
17. MANAGEMENT REVIEW (2nd - Chief Operations, Construction, Engineering, etc.)			
<p>a. <input type="checkbox"/> CONCUR b. <input type="checkbox"/> NON CONCUR c. COMMENTS</p>			
SIGNATURE	TITLE (Division Chief)	DATE	
18. SAFETY AND OCCUPATIONAL HEALTH OFFICE REVIEW			
<p>a. <input type="checkbox"/> CONCUR b. <input type="checkbox"/> NON CONCUR c. ADDITIONAL ACTIONS/COMMENTS</p>			
SIGNATURE	TITLE Chief, CEORH-SO	DATE	
19. COMMAND APPROVAL			
COMMENTS			
<p>COMMANDER SIGNATURE JAMES R. VAN EPPS, COL, CE, Commanding</p>			DATE

(Reverse of ENG Form 3394)

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☆ DSCP.O. 1089-626-113

(For Safety Staff only)		REPORT NO.	ERROR CODE	UNITED STATES ARMY CORPS OF ENGINEERS ACCIDENT INVESTIGATION REPORT (For Use of this Form See Attached Instructions and USACE Suppl to AR 385-40)		REQUIREMENT CONTROL SYMBOL: CEEC-S-8(R2)	
ACCIDENT CLASSIFICATION							
PERSONNEL CLASSIFICATION		INJURY/ILLNESS/FATAL		PROPERTY DAMAGE		MOTOR VEHICLE INVOLVED	
GOVERNMENT <input type="checkbox"/> CIVILIAN <input type="checkbox"/> MILITARY		<input type="checkbox"/>		<input type="checkbox"/> FIRE INVOLVED <input type="checkbox"/> OTHER		<input type="checkbox"/>	
<input type="checkbox"/> CONTRACTOR		<input checked="" type="checkbox"/>		<input type="checkbox"/> FIRE INVOLVED <input type="checkbox"/> OTHER		<input type="checkbox"/>	
<input type="checkbox"/> PUBLIC		<input type="checkbox"/> FATAL <input type="checkbox"/> OTHER				<input type="checkbox"/>	
PERSONAL DATA							
a. NAME (Last, First, MI) ELAM, JACK O.		b. AGE 44	c. SEX <input checked="" type="checkbox"/> MALE <input type="checkbox"/> FEMALE	d. SOCIAL SECURITY NUMBER ____/____/____		e. GRADE	
f. JOB SERIES/TITLE LABORER		g. DUTY STATUS AT TIME OF ACCIDENT <input checked="" type="checkbox"/> ON DUTY <input type="checkbox"/> IDLE <input type="checkbox"/> OFF DUTY		h. EMPLOYMENT STATUS AT TIME OF ACCIDENT <input type="checkbox"/> ARMY ACTIVE <input type="checkbox"/> ARMY RESERVE <input type="checkbox"/> VOLUNTEER <input type="checkbox"/> PERMANENT <input type="checkbox"/> FOREIGN NATIONAL <input type="checkbox"/> SEASONAL <input type="checkbox"/> TEMPORARY <input type="checkbox"/> STUDENT <input type="checkbox"/> OTHER (Specify) _____			
GENERAL INFORMATION							
a. DATE OF ACCIDENT (month/day/year) 09/16/91		b. TIME OF ACCIDENT (Military time) 1430		c. EXACT LOCATION OF ACCIDENT BATTLE RUN (shoreline)		d. CONTRACTOR'S NAME (1) PRIME: WE DO IT Somewhere, WV (2) SUBCONTRACTOR:	
e. CONTRACT NUMBER DACW69-88-M-0031 <input type="checkbox"/> CIVIL WORKS <input type="checkbox"/> MILITARY <input type="checkbox"/> OTHER (Specify) _____		f. TYPE OF CONTRACT <input type="checkbox"/> CONSTRUCTION <input type="checkbox"/> SERVICE <input type="checkbox"/> A/E <input type="checkbox"/> DESIGN <input checked="" type="checkbox"/> OTHER (Specify) _____		g. HAZARDOUS/TOXIC WASTE ACTIVITY <input type="checkbox"/> SUPERFUND <input type="checkbox"/> DERP <input type="checkbox"/> IRP <input type="checkbox"/> OTHER (Specify) _____			
CONSTRUCTION ACTIVITIES (Fill in box and corresponding code number in box - see instructions)							
a. CONSTRUCTION ACTIVITY		b. TYPE OF CONSTRUCTION EQUIPMENT		(CODE)			
INJURY/ILLNESS INFORMATION (Fill in box and corresponding code number in box - see instructions)							
a. SEVERITY OF ILLNESS / INJURY LOST WORKDAY CASE		(CODE) <input checked="" type="checkbox"/> LWD		b. EST. DAYS LOST 5	c. DAYS HOSPITALIZED 0	d. ESTIMATED DAYS RESTRICTED DUTY 0	
e. BODY PART AFFECTED PRIMARY ANKLE		(CODE) <input checked="" type="checkbox"/> LB		f. TYPE AND SOURCE OF INJURY/ILLNESS TYPE SLIPPED (no fall) (CODE) <input checked="" type="checkbox"/> 0230 SOURCE SCRAP/TRASH (CODE) <input checked="" type="checkbox"/> 0850			
g. NATURE OF ILLNESS / INJURY FRACTURE		(CODE) <input checked="" type="checkbox"/> TF					
PUBLIC FATALITY (Fill in box and corresponding code number in box - see instructions)							
a. ACTIVITY AT TIME OF ACCIDENT		(CODE)		b. PERSONAL PROTECTION DEVICE USED? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A			
MOTOR VEHICLE ACCIDENT							
a. TYPE OF VEHICLE <input type="checkbox"/> PICKUP/VAN <input type="checkbox"/> AUTOMOBILE <input type="checkbox"/> TRUCK <input type="checkbox"/> OTHER (Specify) _____		b. TYPE OF COLLISION <input type="checkbox"/> SIDE SWAP <input type="checkbox"/> HEAD ON <input type="checkbox"/> REAR END <input type="checkbox"/> BROADSIDE <input type="checkbox"/> FRONT OVER <input type="checkbox"/> BACKING <input type="checkbox"/> OTHER (Specify) _____		c. SEAT BELTS USED (1) FRONT SEAT (2) REAR SEAT		NOT USED NOT AVAILABLE	
PROPERTY/MATERIAL INVOLVED							
a. NAME OF ITEM		b. OWNERSHIP		c. \$ AMOUNT OF DAMAGE			
(1)							
(2)							
(3)							
VESSEL / FLOATING PLANT ACCIDENT (Fill in box and corresponding code number in box - see instructions)							
a. TYPE OF VESSEL / FLOATING PLANT		(CODE)		b. TYPE OF COLLISION/SHIP (CODE)			
ACCIDENT DESCRIPTION (Use additional paper, if necessary)							
During the afternoon hours of 16 SEP 91, Mr. Jack Elam, contractor employee for WE DO IT Contracting, was gathering drift and trash for burning at Somewhere Lake. While moving material, Mr. Elam walked into a depression on the shoreline twisting his ankle. He was x-rayed, a chip of the ankle bone was diagnosed and fitted with removeable brace.							

11. CAUSAL FACTOR(S) (Read instruction before completing)			
a. (Explain YES answers in item 13) DESIGN: Was design of facility, workplace or equipment a factor? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/> INSPECTION/MAINTENANCE: Were inspection & maintenance procedures a factor? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/> PERSON'S PHYSICAL CONDITION: In your opinion, was the physical condition of the person a factor? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/> OPERATING PROCEDURES: Were operating procedures a factor? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/> JOB PRACTICES: Were any job safety/health practices not followed when the accident occurred? YES NO <input checked="" type="checkbox"/> <input type="checkbox"/> HUMAN FACTORS: Did any human factors such as, size or strength of person, etc., contribute to accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/> ENVIRONMENTAL FACTORS: Did heat, cold, dust, sun, glare, etc., contribute to the accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/>	b. (CONTINUED) CHEMICAL AND PHYSICAL AGENT FACTORS: Did exposure to chemical agents, such as dust, fumes, mists, vapors or physical agents, such as, noise, radiation, etc., contribute to accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/> OFFICE FACTORS: Did office setting such as, lifting other furniture, carrying, sleeping, etc., contribute to the accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/> SUPPORT FACTORS: Were inappropriate tools/resources provided to properly perform the activity/task? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/> PERSONAL PROTECTIVE EQUIPMENT: Did the improper selection, use or maintenance of personal protective equipment contribute to the accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/> DRUGS/ALCOHOL: In your opinion, was drugs or alcohol a factor to the accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/> b. WAS A WRITTEN JOB/ACTIVITY HAZARD ANALYSIS COMPLETED FOR TASK BEING PERFORMED AT TIME OF ACCIDENT? <input checked="" type="checkbox"/> YES (If yes, attach a copy) NO <input type="checkbox"/>		
12. TRAINING			
a. WAS PERSON TRAINED TO PERFORM ACTIVITY/TASK? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	b. TYPE OF TRAINING <input type="checkbox"/> CLASSROOM <input checked="" type="checkbox"/> ON JOB	c. DATE OF MOST RECENT FORMAL TRAINING. 09 / 16 / 90 (Month) (Day) (Year)	
13. FULLY EXPLAIN WHAT ALLOWED OR CAUSED THE ACCIDENT; INCLUDE DIRECT AND INDIRECT CAUSES (See instruction for definition of direct and indirect causes.) (Use additional paper, if necessary)			
a. DIRECT CAUSE Mr. Elam failed to recognize a change in the slope of the shoreline.			
b. INDIRECT CAUSE(S) Improper attention caused Mr. Elam to walk into a depression in the shoreline.			
14. ACTION(S) TAKEN, ANTICIPATED OR RECOMMENDED TO ELIMINATE CAUSE(S).			
DESCRIBE FULLY: The contractor is to discuss the accident with employees and emphasize proper attention to work areas and caution to prevent a recurrence.			
15. SUPERVISOR ACTION(S) TAKEN IN BLOCK			
a. BEGINNING (Month/Day/Year) 09 / 17 / 91	b. ANTICIPATED COMPLETION (Month/Day/Year) 09 / 17 / 91		
c. SIGNATURE AND TITLE OF SUPERVISOR COMPLETING REPORT CORPS _____ CONTRACTOR Contractor or Representative	d. DATE (Mo/Da/Yr) 09 / 17 / 91	e. ORGANIZATION IDENTIFIER (Div. Br. Sect.) CEORH-OR-R	f. OFFICE SYMBOL SUM
16. MANAGEMENT REVIEW (1st)			
a. <input type="checkbox"/> CONCUR b. <input type="checkbox"/> NON CONCUR c. COMMENTS			
SIGNATURE _____		TITLE (Branch Chief) DATE _____	
17. MANAGEMENT REVIEW (2nd - Chief Operations, Construction, Engineering, etc.)			
a. <input type="checkbox"/> CONCUR b. <input type="checkbox"/> NON CONCUR c. COMMENTS			
SIGNATURE _____		TITLE (Element Chief) DATE _____	
18. SAFETY AND OCCUPATIONAL HEALTH OFFICE REVIEW			
a. <input type="checkbox"/> CONCUR b. <input type="checkbox"/> NON CONCUR c. ADDITIONAL ACTIONS/COMMENTS:			
SIGNATURE _____		TITLE Chief, CEORH-SO DATE _____	
19. COMMAND APPROVAL			
COMMENTS _____			
COMMANDER SIGNATURE _____			DATE _____
James R. Van Epps, Col., C.E. Commanding			

(For Safety Staff only)		REPORT NO	ENTRY CODE	UNITED STATES ARMY CORPS OF ENGINEERS ACCIDENT INVESTIGATION REPORT (For Use of this Form See Attached Instructions and USACE Supply to AR 385-40)		REQUIREMENT CONTROL SYMBOL: CEEC-S-8(R2)	
1. ACCIDENT CLASSIFICATION							
PERSONNEL CLASSIFICATION		INJURY/ILLNESS/FATAL		PROPERTY DAMAGE		MOTOR VEHICLE INVOLVED	
GOVERNMENT <input checked="" type="checkbox"/> CIVILIAN <input type="checkbox"/> MILITARY		<input checked="" type="checkbox"/>		<input type="checkbox"/> FIRE INVOLVED <input type="checkbox"/> OTHER		<input checked="" type="checkbox"/>	
<input type="checkbox"/> CONTRACTOR		<input type="checkbox"/>		<input type="checkbox"/> FIRE INVOLVED <input type="checkbox"/> OTHER		<input type="checkbox"/>	
<input type="checkbox"/> PUBLIC		<input type="checkbox"/> FATAL <input type="checkbox"/> OTHER		<input type="checkbox"/>		<input type="checkbox"/>	
2. PERSONAL DATA							
a. NAME (Last, First, MI) BENTIT, LEROY U.		b. AGE 34	c. SEX <input checked="" type="checkbox"/> MALE <input type="checkbox"/> FEMALE	d. SOCIAL SECURITY NUMBER 2 2 2 / 2 2 2 2			e. GRADE GS-07
f. JOB SERIES/TITLE 0810 CIVIL ENGINEER		g. DUTY STATUS AT TIME OF ACCIDENT <input checked="" type="checkbox"/> ON DUTY <input type="checkbox"/> OFF DUTY		h. EMPLOYMENT STATUS AT TIME OF ACCIDENT <input type="checkbox"/> ARMY ACTIVE <input type="checkbox"/> ARMY RESERVE <input type="checkbox"/> VOLUNTEER <input checked="" type="checkbox"/> PERMANENT <input type="checkbox"/> FOREIGN NATIONAL <input type="checkbox"/> SEASONAL <input type="checkbox"/> TEMPORARY <input type="checkbox"/> STUDENT <input type="checkbox"/> OTHER (Specify)			
3. GENERAL INFORMATION							
a. DATE OF ACCIDENT (month/day/year) 01 / 14 / 92		b. TIME OF ACCIDENT (Military time) 1100		c. EXACT LOCATION OF ACCIDENT WV Route 50/Route 33		d. CONTRACTOR'S NAME (1) PRIME: (2) SUBCONTRACTOR:	
e. CONTRACT NUMBER <input type="checkbox"/> CIVIL WORKS <input type="checkbox"/> MILITARY <input type="checkbox"/> OTHER (Specify)		f. TYPE OF CONTRACT <input type="checkbox"/> CONSTRUCTION <input type="checkbox"/> SERVICE <input type="checkbox"/> MAINT <input type="checkbox"/> DIRECTOR <input type="checkbox"/> OTHER (Specify)		g. HAZARDOUS/TOXIC WASTE ACTIVITY <input type="checkbox"/> SUPERFUND <input type="checkbox"/> DEEP <input type="checkbox"/> HAP <input type="checkbox"/> OTHER (Specify)			
4. CONSTRUCTION ACTIVITIES (fill in line and corresponding code number in box - see instructions)							
a. CONSTRUCTION ACTIVITY (CODE) #							
5. INJURY / ILLNESS INFORMATION (fill in line and corresponding code number in box - see instructions)							
a. SEVERITY OF ILLNESS / INJURY LOST WORKDAY CASE		b. DAYS LOST # LWD 4		c. DAYS RESTRICTED # 0		d. ESTIMATED DAYS RESTRICTED DUTY # 0	
e. BODY PART AFFECTED PRIMARY BRAIN (CODE) # CB SECONDARY (CODE) #		f. TYPE AND SOURCE OF INJURY/ILLNESS TYPE: STRUCK AGAINST (CODE) # 0120 SOURCE: Driver of Gov't Vehicle (CODE) # 0421					
6. PUBLIC FATALITY (fill in line and corresponding code number in box - see instructions)							
a. ACTIVITY AT TIME OF ACCIDENT (CODE) #		b. PERSONAL FLOTATION DEVICE USED? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A					
7. MOTOR VEHICLE ACCIDENT							
a. TYPE OF VEHICLE <input type="checkbox"/> PICKUP/VAN <input checked="" type="checkbox"/> AUTOMOBILE <input type="checkbox"/> TRUCK <input type="checkbox"/> OTHER (Specify)		b. TYPE OF COLLISION <input type="checkbox"/> SIDE SWAY <input type="checkbox"/> HEAD ON <input type="checkbox"/> REAR END <input checked="" type="checkbox"/> BROADSIDE <input type="checkbox"/> FRONT OVER <input type="checkbox"/> BACKING <input type="checkbox"/> OTHER (Specify)		c. SEAT BELTS USED (1) FRONT SEAT X (2) REAR SEAT		NOT USED NOT AVAILABLE	
8. PROPERTY/MATERIAL INVOLVED							
a. NAME OF ITEM (1) 1988 Plymouth-4 Door Sedan (2) 1980 Maverick-2 Door Sedan (3)		b. OWNER RESID Army Non-Army		c. \$ AMOUNT OF DAMAGE \$1,050 \$750			
9. VESSEL / FLOATING PLANT ACCIDENT (fill in line and corresponding code number in box - see instructions)							
a. TYPE OF VESSEL / FLOATING PLANT (CODE) #		b. TYPE OF COLLISION/IMPACT (CODE) #					
10. ACCIDENT DESCRIPTION (Use additional paper, if necessary) Mr. Bentit was enroute to Pikeville Lake in a Government vehicle, temperature was 25° F & it was snowing. Road surface appeared clear, approaching Rt. 50/Route 33 intersection, Mr. Bentit was following a pickup which stopped unexpectedly in attempting to avoid a rear-end collision he hit his breaks resulting in a skid into a 1980 Maverick stopped at stop sign to cross Rt. 50.							

ENG FORM 3394, Sep 89

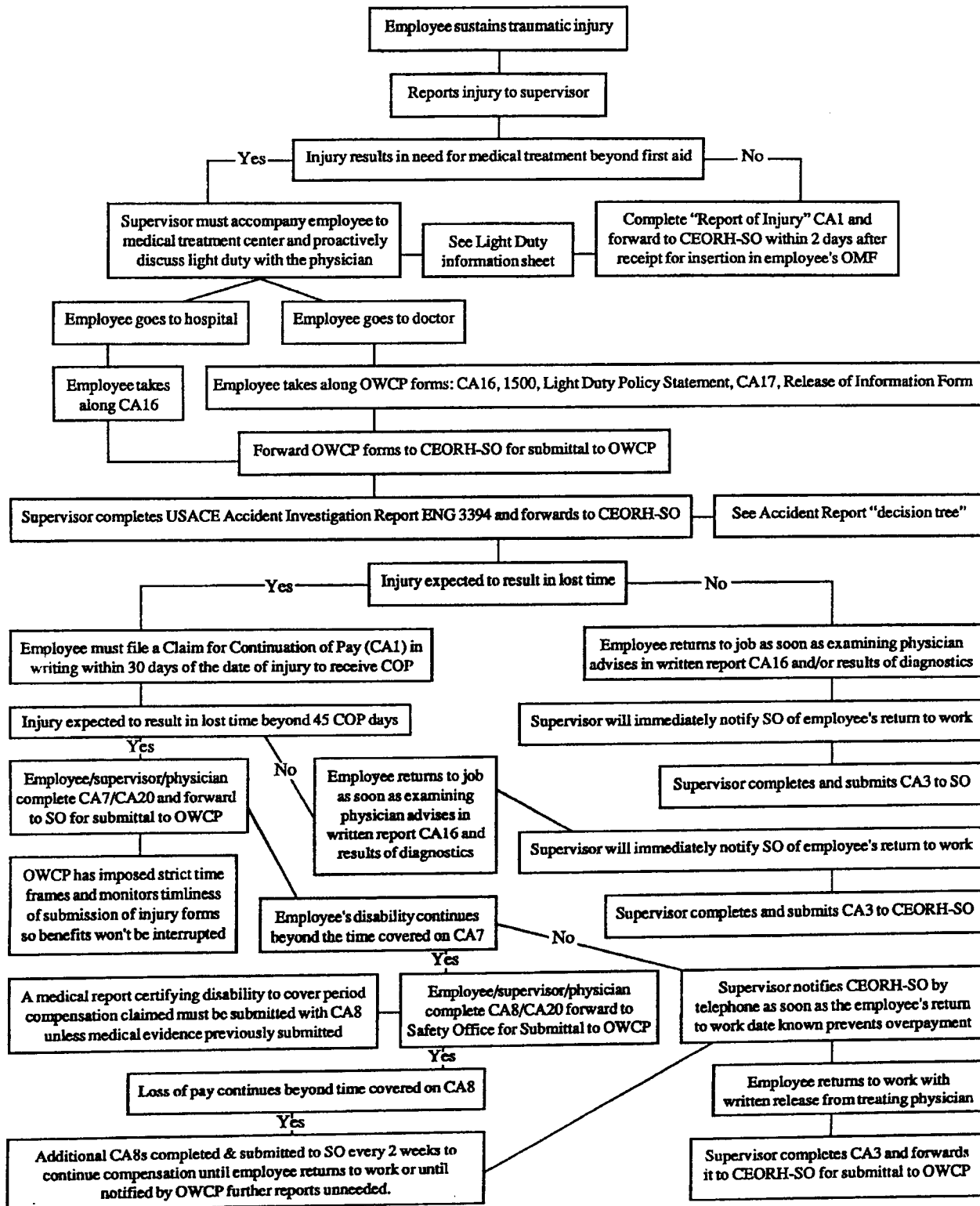
EXTENSION OF JURISDICTION IS OBSOLETE

Page 1 of 2 pages

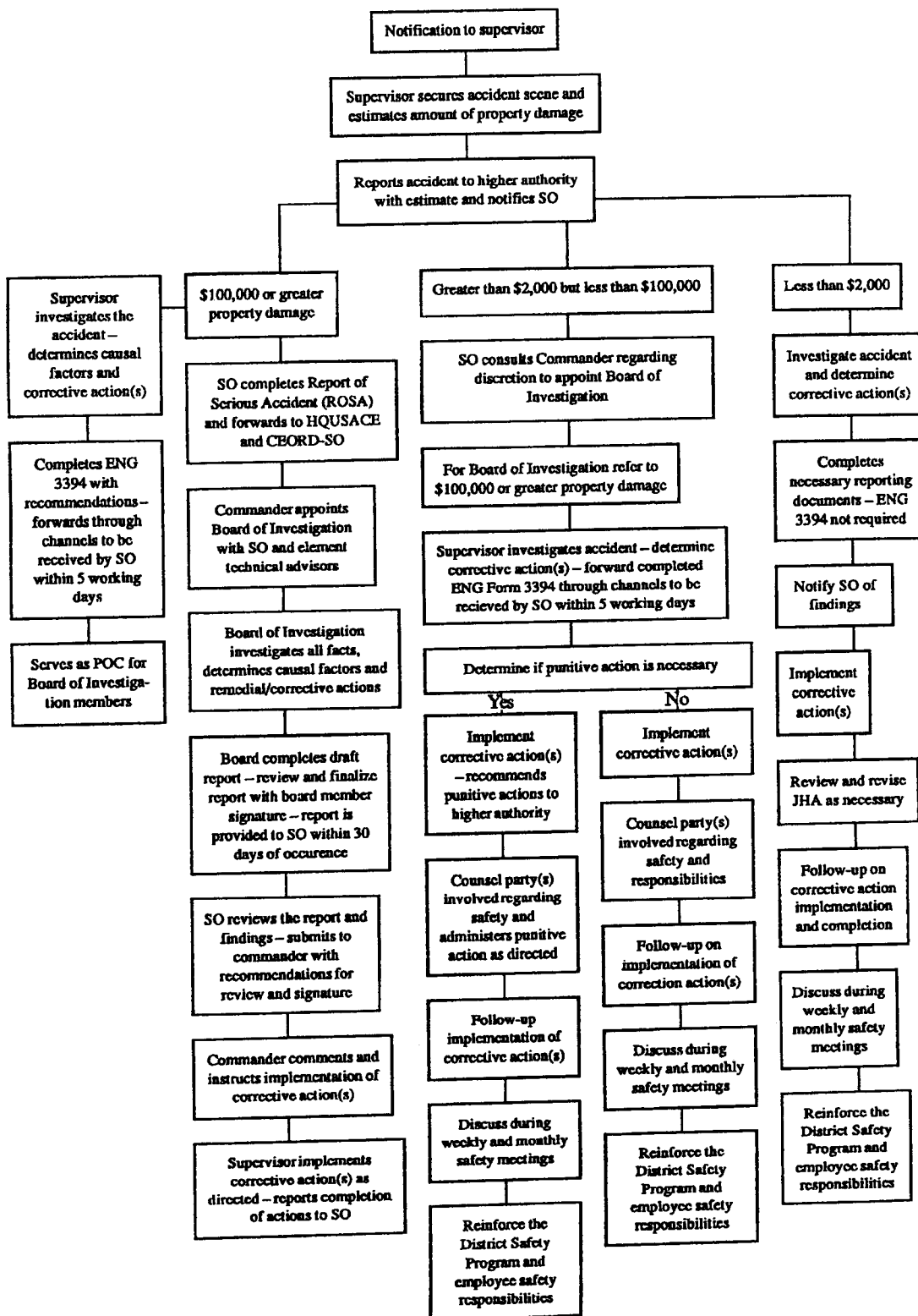
(Prepared: CEMPS)

11. CAUSAL FACTOR(S) (Read instruction before completing)			
<p>a. (Explain YES answers in item 13)</p> <p>DESIGN: Was design of facility, workplace or equipment a factor? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>INSPECTION/MAINTENANCE: Were inspection & maintenance procedures a factor? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>PERSON'S PHYSICAL CONDITION: In your opinion, was the physical condition of the person a factor? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>OPERATING PROCEDURES: Were operating procedures a factor? YES NO <input checked="" type="checkbox"/> <input type="checkbox"/></p> <p>JOB PRACTICES: Were any job safety/health practices not followed when the accident occurred? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>HUMAN FACTORS: Did any human factors such as, size or strength of person, etc., contribute to accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>ENVIRONMENTAL FACTORS: Did heat, cold, dust, sun, glare, etc., contribute to the accident? YES NO <input type="checkbox"/> <input type="checkbox"/></p>	<p>a. (CONTINUED)</p> <p>CHEMICAL AND PHYSICAL AGENT FACTORS: Did exposure to chemical agents, such as dust, fumes, mists, vapors or physical agents, such as, noise, radiation, etc., contribute to accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>OFFICE FACTORS: Did office setting such as, lifting office furniture, carrying, stooping, etc., contribute to the accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>SUPPORT FACTORS: Were inappropriate tools/resources provided to properly perform the activity/task? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>PERSONAL PROTECTIVE EQUIPMENT: Did the improper selection, use or maintenance of personal protective equipment contribute to the accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>DRUGS/ALCOHOL: In your opinion, was drugs or alcohol a factor to the accident? YES NO <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>b. WAS A WRITTEN JOB/ACTIVITY HAZARD ANALYSIS COMPLETED FOR TASK BEING PERFORMED AT TIME OF ACCIDENT? <input type="checkbox"/> YES (If yes, attach a copy) <input checked="" type="checkbox"/> NO</p>		
12. TRAINING			
<p>a. WAS PERSON TRAINED TO PERFORM ACTIVITY/TASK? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p>	<p>b. TYPE OF TRAINING: <input checked="" type="checkbox"/> CLASSROOM <input type="checkbox"/> ON JOB</p>	<p>c. DATE OF MOST RECENT FORMAL TRAINING: 08 / 10 / 87 (Month) (Day) (Year)</p>	
13. FULLY EXPLAIN WHAT ALLOWED OR CAUSED THE ACCIDENT; INCLUDE DIRECT AND INDIRECT CAUSES (See instruction for definition of direct and indirect causes.) (Use additional paper, if necessary)			
<p>a. DIRECT CAUSE <u>Failure of Bentit to maintain control of and stop government vehicle within safe distance.</u></p> <p>b. INDIRECT CAUSE(S) <u>Failure of Bentit to maintain safe following distance.</u></p>			
14. ACTION(S) TAKEN, ANTICIPATED OR RECOMMENDED TO ELIMINATE CAUSE(S)			
<p>DESCRIBE FULLY: Bentit (structure on safe driving procedure, speed, fuel, planning for road and weather conditions) was not trained on complete road & weather conditions. This accident will be corrected and safety training for next will be included in next available DDC course.</p>			
15. REPORTING INFORMATION			
<p>a. BEGINNING (Month/Day/Year) 01 / 15 / 92</p>	<p>b. ANTICIPATED COMPLETION (Month/Day/Year) 03 / 15 / 92</p>		
<p>c. SIGNATURE AND TITLE OF SUPERVISOR COMPLETING REPORT CORPS (Immediate Supervisor) CONTRACTOR</p>	<p>d. DATE (Mo/Da/Yr) 01 / 15 / 92</p>	<p>e. ORGANIZATION IDENTIFIER (Div, Br, Sect) CEORII-ED</p>	<p>f. OFFICE SYMBOL ED-S</p>
16. MANAGEMENT REVIEW (1st)			
<p>a. <input type="checkbox"/> CONCUR b. <input type="checkbox"/> NON CONCUR c. COMMENTS</p>			
SIGNATURE		TITLE (Branch Chief)	
DATE			
17. MANAGEMENT REVIEW (2nd - Chief Operations, Construction, Engineering, etc.)			
<p>a. <input type="checkbox"/> CONCUR b. <input type="checkbox"/> NON CONCUR c. COMMENTS</p>			
SIGNATURE		TITLE (Element Chief)	
DATE			
18. SAFETY AND OCCUPATIONAL HEALTH OFFICE REVIEW			
<p>a. <input type="checkbox"/> CONCUR b. <input type="checkbox"/> NON CONCUR c. ADDITIONAL ACTIONS/COMMENTS</p>			
SIGNATURE		TITLE Chief, CEORII-SO	
DATE			
19. COMMAND APPROVAL			
COMMENTS			
COMMANDER SIGNATURE JAMES R. VAN EPPS, COL, CE Commanding			DATE

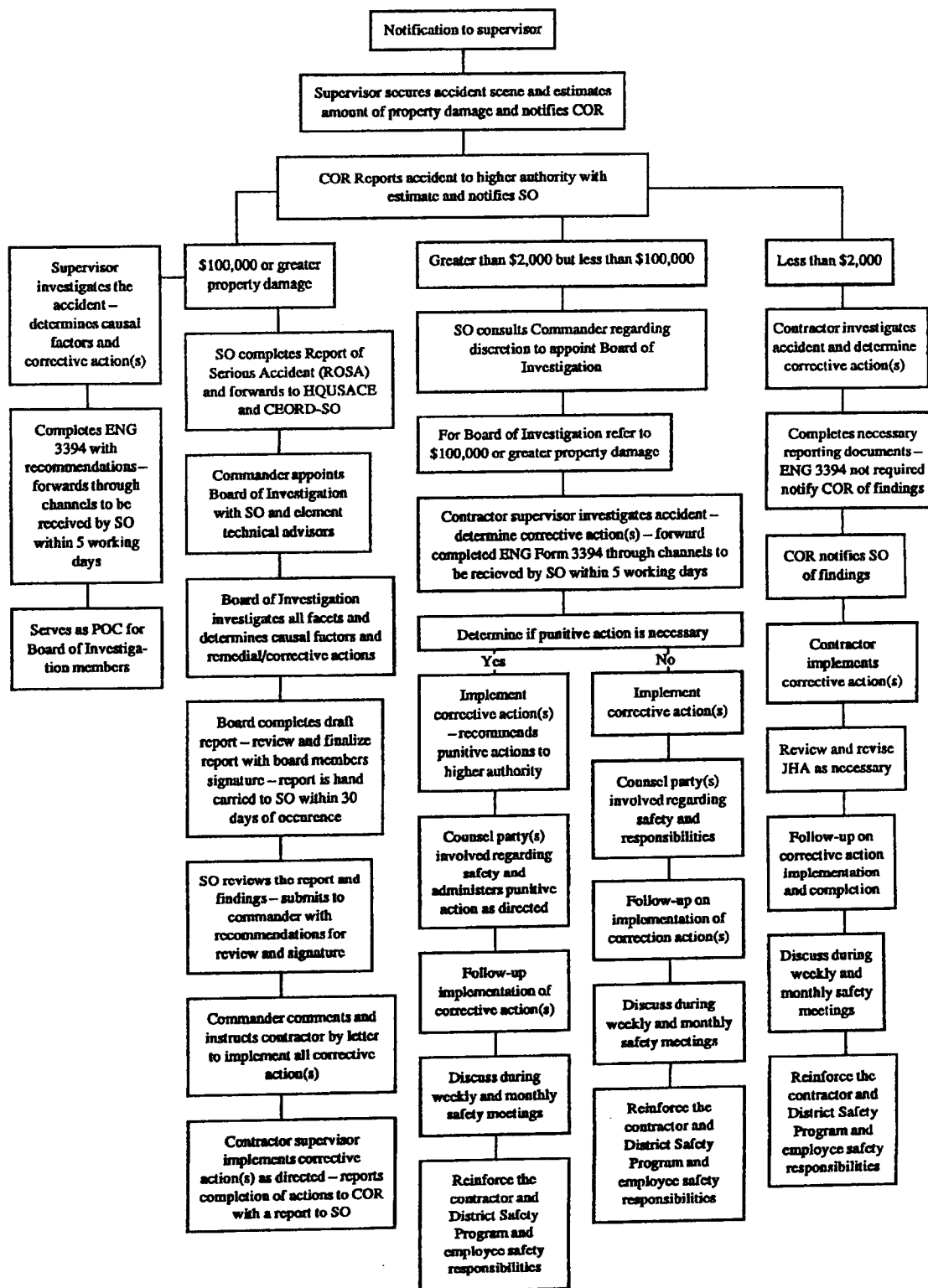
Supervisor's OWCP Decision Tree: Critical Paths Reporting Traumatic Injury



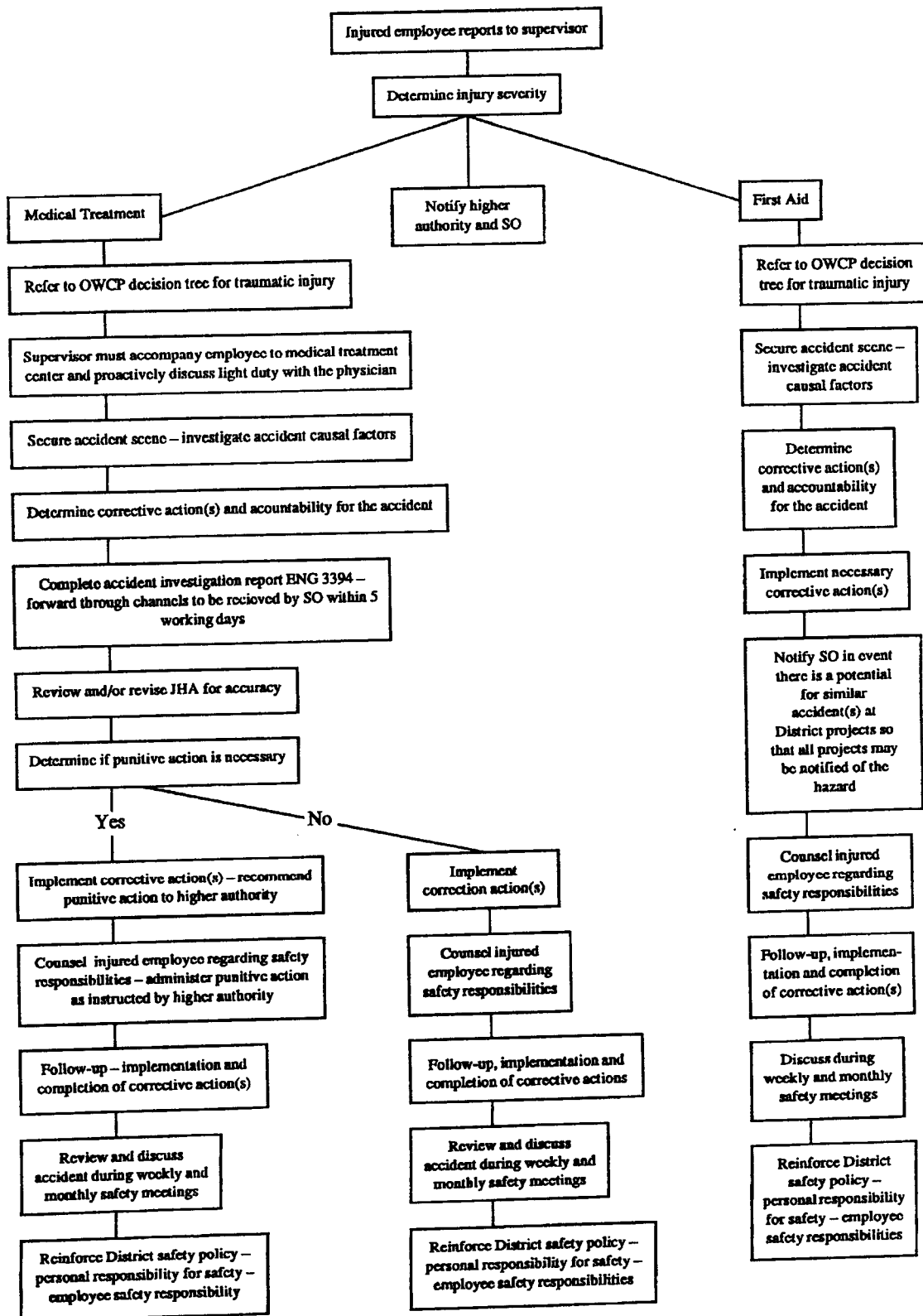
Supervisor's Accident Decision Tree: Government Property Damage Accident



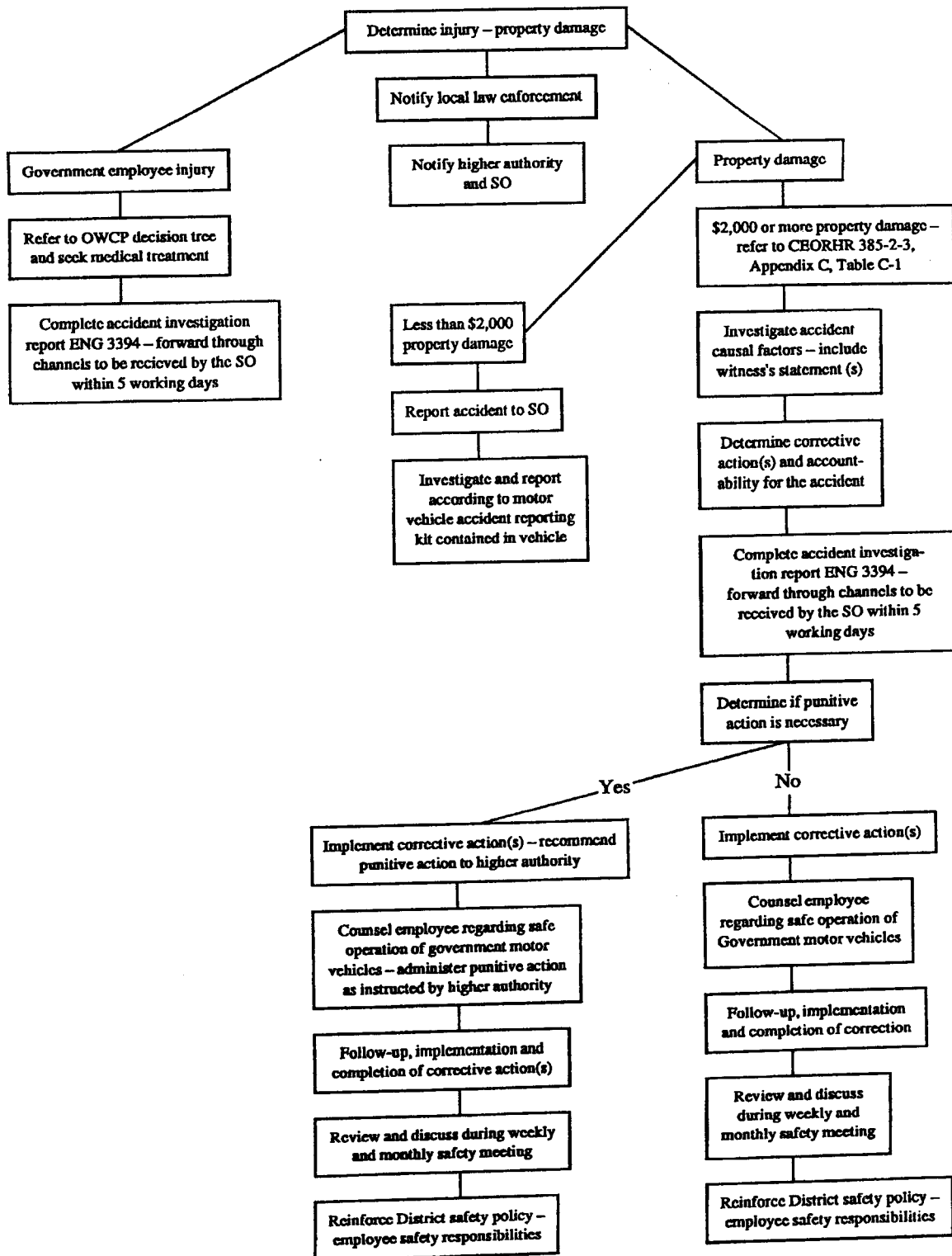
Supervisor's Accident Decision Tree: Contractor Property Damage Accident



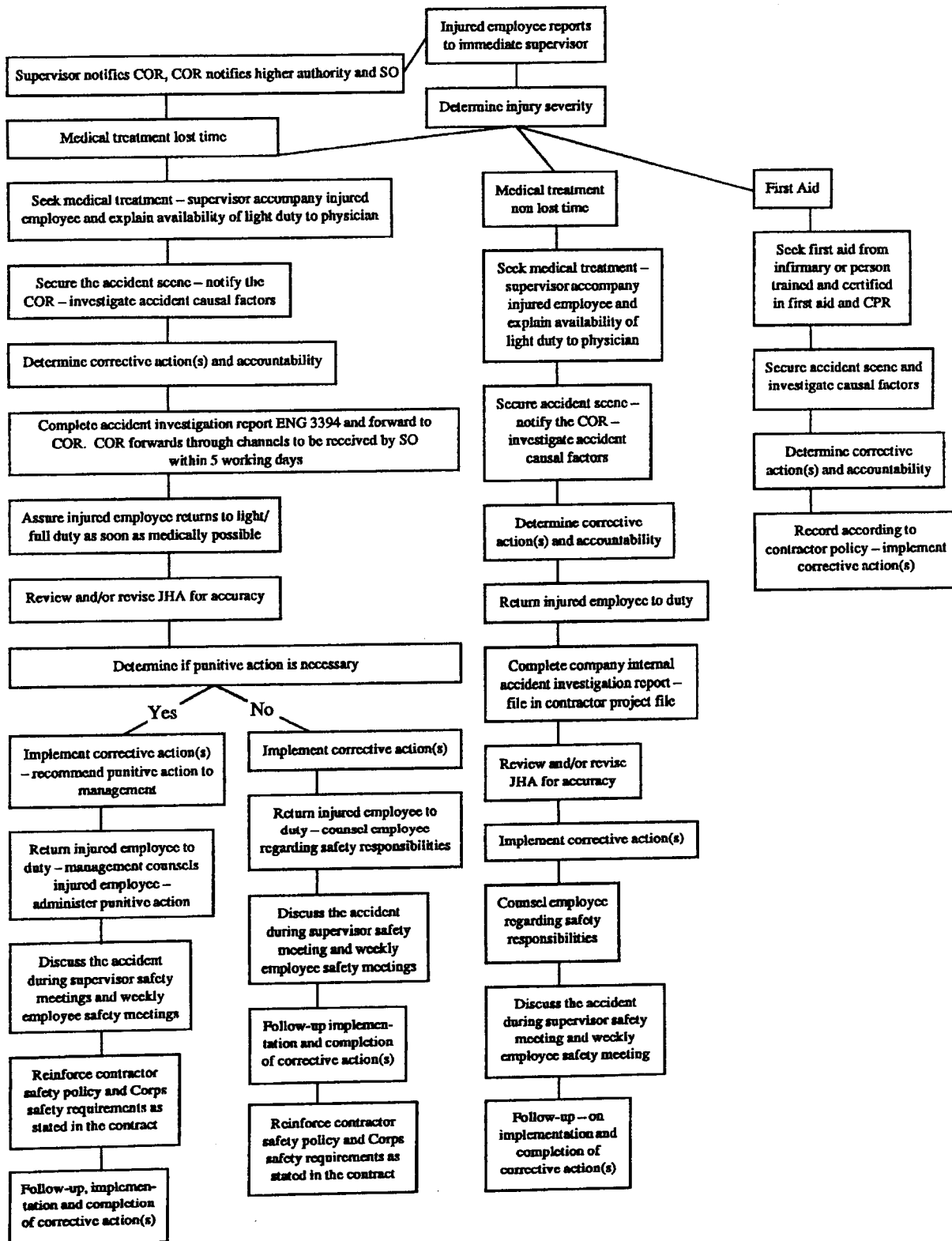
Supervisor's Accident Decision Tree: Government Employee Injury



Supervisor's Accident Decision Tree: Government Employee Motor Vehicle Accident



Supervisor's Accident Decision Tree: Contractor Employee Injury



APPENDIX D Fire Prevention and Protection

1. Purpose. This appendix prescribes responsibilities and procedures for maintaining a comprehensive fire protection program in the District.

2. Applicability. This appendix applies to all Huntington District field installations and field activities.

3. References. EM 385-1-1 (Safety and Health Requirements Manual)
AR 420-90 (Fire Protection)
National Fire Protection
Association Standard No. 10

4. Responsibilities. All team members are required to comply with the procedures prescribed herein, as applicable. Installation Collateral Duty Safety Representatives will assist in carrying out the provisions of these regulations.

5. Fire Drills. The installation team leader shall conduct at least one fire drill every three months.

6. Fire Inspections. The installation team leader and/or Collateral Duty Safety Representative shall make inspections, as outlined below, to determine whether conditions or practices exist which may create fire hazards. If any fire hazards are found, immediately correct all deficiencies. Use "Checklist for Fire Inspections" (see p. D-3) as a guide to assure that all elements are properly inspected.

a. Weekly inspections shall be made to determine if any fire hazards exist and to ensure that all fire extinguishers and other fire-fighting equipment are properly located.

b. Monthly inspections will include the following items:

(1) Check location of extinguishers to ensure that they are accessible.

(2) Check surrounding areas for fire hazards to ensure that extinguishers are the correct type.

(3) Check extinguisher supports for security.

(4) Check extinguisher for external leakage, corrosion, or damage.

(5) Inspect hose for deterioration. If hose shows signs of cracks or breaks, remove extinguisher and replace hose.

(6) Inspect discharge horn and nozzle to be sure it is free from any accumulation and is not plugged. (Common obstructions are made by spiders and mud daubers.)

(7) Lift extinguisher to determine that contents are sufficient; if pump type, check if pump works. Check fire extinguisher gauges for adequate pressures (arrow pointing on green part of gauge).

(8) Check all extinguisher locking pins for tamper seals. These seals are normally a small wire with a metal or plastic connector. The seals indicate whether the extinguisher has been tampered with or not. If the seal is missing, it is necessary to check the extinguisher contents.

(9) Check the extinguisher for Fire Extinguisher Record (ORD Form 385).

(10) Record the date of inspection and date of recharge. Inspectors will initial the extinguisher tag.

(11) Visually inspect fire hoses, nozzles and connections to ensure that hoses are hung in proper position for use. Defective hoses will be replaced or repaired.

7. Fire Extinguishers.

a. The installation team leader will instruct all team members in the hazards of using foam, or water-type fire extinguishers on electrical and petroleum product fires. Team leaders will train team members in the proper use of fire extinguishers.

b. Fire extinguishers will be identified as to the class of fires for which they may be used. The identification may either be on the extinguisher or placed on the wall directly above the fire extinguisher.

c. Fire protection equipment will be maintained in good working condition at all times. Inspections will be performed in accordance with Appendix L of Safety and Health Requirements Manual, EM 385-1-1. Hydrostatic tests of compressed gas cylinder-type fire extinguishers

will be accomplished according to the table below. A complete list of extinguishers in use will be prepared at each installation. The list will outline all pertinent data regarding the extinguishers, including the hydrostatic testing intervals. Tests will be performed by a supplier or manufacturer of fire extinguishers. Records of all tests will be maintained in project files.

d. All government motor vehicles shall be equipped with at least a ABC 5-pound fire extinguisher.

e. All fire extinguishers to be procured will be selected for the specific class or classes of hazards involved. Most replacements will continue to be multipurpose type. However, where electrical panels and equipment are involved, class "C" extinguishers should be procured. Capacities of the extinguishers procured should be carefully evaluated.

8. **Reports.** Fire reports shall be submitted in accordance with AR 420-90.

Hydrostatic Test Interval For Extinguishers

Extinguisher Type	Test Interval Year
Soda-acid no longer approved for use – dispose of appropriately	
Cartridge-operated water and/or antifreeze	5
Stored-pressure water and/or antifreeze	5
Wetting agent	5
Foam	5
Loaded stream	5
Dry chemical extinguishers with stainless steel shells, or soldered brass shells	5
Carbon dioxide extinguishers	5
Dry chemical extinguishers with brazed-brass shells, mild-steel shells, or aluminum shells	12
Bromotrifluoromethane	12
Dry powder extinguishers for metal fires	12
Halon Extinguishers	5

(Please note that by DOD Directive 6090 dated 9 Nov 90, October 1995 and complete elimination of use within our inventories by October 2000. It will be unlawful to vent Halon 1211 or Halon 1301 into the atmosphere after 1 July 1992.)

Checklist For Fire Inspections

1. Is there any accumulation of waste, flammable material, or rubbish on the premises? (Wire and cords should not come in contact with metal piping or be suspended from nails.)
2. Are the storage rooms clean?
3. Are approved waste cans provided for oily or greasy waste materials?
4. Are waste cans emptied daily, before or after closing hours, and is the waste material properly disposed of?
5. Are any entrances, exits, or fire escapes obstructed?
6. Is any woodwork or other combustible material too near steam pipes, boilers, flues, or furnaces? Are all metal flue joints securely fastened by weld or metal screws?
7. Is the fuel supply safely stored?
8. Are there any open flame lights or electric light bulbs near combustible materials?
9. Is all electric wiring and equipment checked annually?
10. Are any electric fuses replaced by wire or any other improper current-carrying materials or devices? Are the installed fuses correct in capacity for the circuit?
11. Are there any violations of smoking rules?
12. Are all fire pails, hoses, nozzles, and chemical extinguishers in place and in good condition?
13. Are any sprinkler heads coated with paint or corroded?
14. Is there any part of the premises that is not frequently visited?
15. Are safety rules observed when handling or using flammable liquids?
16. Are proper precautions taken to isolate storage of combustible stocks?

APPENDIX E Job Hazard Analysis

1. Purpose. The purpose of this appendix is to outline a process for identification of potential hazards to team members and to pre-plan appropriate actions for the hazards involved.

2. Applicability. A Job Hazard Analysis will be completed for major maintenance work done at a frequency of one month or greater, construction work, or any other operation where there are inherent hazards. In general, a Job Hazard Analysis (JHA) should be completed for all activities other than the day-to-day routine work activities. Contractors shall prepare JHA's for all major job activities.

3. Procedures. Team leaders will assure all work described in paragraph 2 is analyzed in the JHA method. The results will be recorded on ORH Form 2642 (Job Hazard Analysis) (see page E-3). Once completed, the JHA should be reviewed, at least, by the installation team leader. The Safety & Occupational Health Office will review and return all JHA's transmitted to them. The JHA must be completed far enough in advance so the JHA may be reviewed by the appropriate team leaders and discussed with all team members assigned to perform the job before the work is initiated.

4. Methods. There are three methods of writing a JHA:

- a. Observation.
- b. Group Discussion.
- c. Recall and Check.

a. Observation Method. When utilizing this method, the preparer of the JHA actually observes the job being performed. This method permits the preparer to effectively recognize hazards as the job is being completed and permits interaction with the team members who are performing the job. In addition, it encourages the preparer to learn new things about the job. The limitations of this method is that it is difficult to accomplish when the job is infrequently performed, and also, the job is performed at least once without the benefit of prior hazard analysis.

b. Group Discussion Method. A group of informed team members discuss the specific job being analyzed. One person serves as the group leader and through discussion the basic steps of the job are determined. Next the potential hazards associated with the job steps are established through the group sharing their knowledge and experiences. Finally, the group arrives at an agreement on the solutions to the hazards. This method requires a skilled discussion leader

and someone to record the ideas and final results. Some advantages of this method are:

(1) A broad base of knowledge and experience may be utilized.

(2) Discussion promotes acceptance of the finalized JHA.

(3) This method is a training tool itself, and it avoids the limitations of the observation method.

The disadvantage of this method is that it may be impractical to get a group of "informed" team members together. However, this may be overcome by utilizing this method during a safety meeting or during a slack period in the work schedule.

c. Recall and Check Method. In this method one preparer writes the JHA utilizing his/her memory on the proper performance of the job. Upon completion of the JHA, the preliminary version is reviewed by others familiar with the job and revised. This method is quite flexible and does not require initial group participation. However, it is probably the least desirable method of preparing a JHA. The preparer who utilizes this method must be thoroughly knowledgeable on the details of the job. This method works best when several preparers independently analyze a job. Then the individual versions are combined together to once again utilize the expertise of several employees.

5. Uses. The preparation itself of a JHA is a learning experience for the preparer(s). Of course, the maximum benefit of the JHA is only obtained if it is used. The JHA must be reviewed by all team members assigned to the job prior to *each* time the job is performed. Some uses of JHA's are:

- a. Initial Job Safety Training.
- b. Job Safety Review Training.
- c. Pre-Job Instruction on Hazardous or Infrequent Jobs.
- d. Review of Job Procedures After an Accident.
- e. Study of Jobs for Possible Improvement in Job Methods.

6. Basic Steps. The five basic steps of completing a JHA are:

- a. Select the job to be analyzed.
- b. Break the job down into steps.
- c. Identify the hazards or potential accidents.
- d. Develop solutions for the potential hazards/accidents.
- e. Review the finished analysis with all team members assigned to complete the job.

7. Checklist for Preparation. The following checklist is included to assist team leaders in their approach to a Job Hazard Analysis (see below). The list is not all-inclusive. Other provisions of the Safety and Health Manual, EM 385-1-1, should be considered where appropriate.

- a. Personal protective apparel required for team members? EM 385-1-1, Section 7.
- b. Are there any special access problems—scaffolds, ladders, temporary walkways, etc? EM 385-1-1, Section 22.
- c. Equipment to be used (machinery): (1) Is it in good state of repair? (2) Is it adequate for the job? (3) Are all required guards in place? EM 385-1-1, Section 18.
- d. Is manual lifting involved? EM 385-1-1, Sections 5 & 11.

e. Are there any poisonous or toxic substances involved? EM 385-1-1, Section 8.

f. Is the use of electricity involved? (1) Proper grounding? (2) Physical protection of circuits? EM 385-1-1, Section 15.

g. Is there a fire hazard?

h. Is there danger from atmospheric contaminants? (1) Carbon monoxide? (2) Welding fumes? (3) Paint or solvent fumes? EM 385-1-1, Section 7.B.

i. Are hand or power tools to be used? (1) What condition are they in? (2) Do they have guards? (3) What type of tools are needed? EM 385-1-1, Section 16.

j. Will motor vehicles be used in transportation of team members and materials? EM 385-1-1, Section 19.

k. Are there medical facilities available? (1) First Aid kit? (2) Qualified first-aid attendant in work crew? (3) Emergency phone numbers available? EM 385-1-1, Section 4.

l. Will hazardous or toxic materials be used? If so do you have all appropriate Material Safety Data Sheets. (Attach copies to the JHA.)

m. Will work involve lockout or tagout? Confined space?

This is not a complete checklist. It is included as a guide to help the supervisor develop his job hazard analysis.

JOB HAZARD ANALYSIS	
PROJECT: _____ JOB: _____ PREPARED BY: _____ REVIEWED BY: _____ *(Include Photographs of Work)	DATE: _____ ESTIMATED STARTING DATE: _____ RECOMMENDED PROTECTIVE CLOTHING AND EQUIPMENT: _____ Page _____ of _____
PART I JOB STEPS	PART II HAZARDS
PART III ACTION TO ELIMINATE OR MINIMIZE HAZARD	

CEORH Form 2642
1 Dec 90

(Previous Edition Obsolete)

(CEORHR 385-2-3)

SO

SAMPLE

APPENDIX F

Standard Army Safety and Occupational Health Inspections (SASOHI)

1. Purpose. This appendix furnishes guidelines for the identification and abatement of safety and occupational health hazards in the workplace.

2. References. AR 385-10 (Army Safety Program)
Code of Federal Regulations, Title
19, Parts 1910, 1926 and 1960,
Department of Labor Regulations
on Federal Worker Safety and
Health Provisions

3. Policy. Executive Order 12196, implementing Section 19, P.L. 91-596, the Occupational Safety and Health Act of 1970 (OSHA), requires that all Federal agencies adopt safety and health standards consistent with OSHA standards and promptly abate unsafe and unhealthful working conditions in Federal workplaces. It is the policy of the U.S. Army Corps of Engineers that all Corps of Engineers projects, plants and facilities provide places of employment that are consistent with the Occupational Safety and Health Standards published by the Secretary of Labor and are, so much as possible, free of work hazards and health risks.

4. Responsibilities.

a. The Safety & Occupational Health Office will provide staff supervision to assure that surveys are accomplished, provide technical assistance upon request, and coordinate the program for inspection of District Office elements and field projects.

b. Team leaders in charge of the field installations or offices will be responsible for assuring that inspections and necessary reporting are completed. Since the Marietta Repair Station and the U.S. Repair Fleet have been designated high hazard areas, they will also receive a standard Army Safety & Occupational Health Inspection by the Safety & Occupational Health Office annually.

c. All other District workplace inspections and reporting will be the responsibility of the appropriate Division Chiefs.

d. In addition to the annual SASOHI, all field projects will conduct inspection and offices will be inspected monthly. See pages F-3 through F-7 for inspection checklists.

5. Inspections.

a. EM 385-1-1 (Safety & Health Requirements Manual) is consistent with OSHA standards and should be used as

the reference for this survey. For operations not covered by EM 385-1-1, 29 CFR 1910 should be referenced. The Safety & Occupational Health Office may be consulted for assistance in selecting an appropriate checklist. Commercially prepared OSHA inspection checklists are available and may be useful.

b. All facilities shall be inspected annually. Hazard severity categories will be assigned for each deficiency by Roman numeral according to the following criteria:

(1) Category I. Catastrophic. May cause death or loss of a facility. Examples are:

(a) A leaking carbon monoxide source within a poorly ventilated enclosure.

(b) Non-explosion proof electrical fixtures used in an enclosure in which there are fumes of flammable materials.

(2) Category II. Critical. May cause severe injury, severe occupational illness, or major property damage. Examples are:

(a) Storage of oxygen cylinders near combustible materials.

(b) An insufficiently guarded work platform 6 feet or more above the surrounding surface.

(3) Category III. Marginal. May cause minor injury, minor occupational illness, or minor property damage. Examples are:

(a) Inadequate eye wash facilities for battery charging area.

(b) Bottom two rungs of ladder broken or damaged.

c. Notice of violation for hazards in Category I or II will be entered on DA Form 4753 (Notice No. _____ of Unsafe or Unhealthful Working Conditions) (see p. F-8). It will be conspicuously posted at or near the location of the hazard.

d. All violations of standards detected during SASOHI will be entered on DA Form 4754 (Violation Inventory Log) (see p. F-9). This log will be used to monitor compliance. It will show all violations in order of discovery, prescribed abatement date and the date for followup on correction of deficiencies. The violation

Inventory Log will be maintained at each project office, and a copy forwarded to the Safety & Occupational Health Office.

6. Abatement Procedures.

a. Deficiencies classified as Category I hazards must be corrected immediately or the hazard controlled so that the deficiency may be placed in a lower classification.

b. DA Form 4756 (Installation Hazard Abatement Plan) (see p. F-10), will be completed for all hazards recorded on DA Form 4754 which are not correctible within 30 days of date of discovery. A copy of DA Form 4756 shall be forwarded to the Safety & Occupational Health Office.

7. Forms. Blank forms prescribed in this regulation are available from the Forms Room.

FIELD PROJECT SAFETY INSPECTION CHECKLIST					
Date of inspection:	Inspector:				
Project:	Contractor Activities:				
Inspection Section <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>SECTION ONE: Building and Structure Inspection</p> <p>SECTION TWO: Tools and Equipment Inspections</p> <p>SECTION THREE: Electrical Inspections</p> <p>SECTION FOUR: Vehicle Inspections</p> </div> <div style="width: 45%;"> <p>SECTION FIVE: Roadways, Signs & Public Use Area Inspections</p> <p>SECTION SIX: Required Procedures and/or Program Inspections</p> <p>SECTION SEVEN: Remarks</p> </div> </div>					
SECTION ONE	BUILDING AND STRUCTURE INSPECTIONS	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10px;"></th> <th style="width: 40px;">Yes</th> <th style="width: 40px;">No</th> </tr> </thead> </table>		Yes	No
	Yes	No			
1.	Is housekeeping properly maintained throughout the project with adequate and neat storage space available?				
2.	Are designated smoking areas posted within the buildings and structures and is smoking prohibited in non-smoking areas and vehicles?				
3.	Are all exits properly signed and marked, and non-exits clearly marked?				
4.	Is proper illumination provided in buildings and structures with adequate and operable emergency lighting?				
5.	Are all overhead lights properly guarded?				
6.	Are steps and stairs having four or more risers provided hand or guard rails?				
7.	Are aisles, passageways, store rooms, catwalks and stair landings kept clear at all times?				
8.	Are there any tripping hazards on different floor elevation that are not marked?				
9.	Are overhead obstructions which could cause injury identified and marked?				
10.	Are flammable storage areas properly labeled and explosion proof lighting and fixtures?				
11.	Are stocks of materials or combustibles properly labeled and stored?				
12.	Are Material Safety Data Sheets available for all toxic and hazardous material on the project?				
13.	Are fire extinguishers installed, inspected monthly, visibly located and readily accessible?				
14.	Are extinguishers classified for the prevalent fire hazard?				
15.	Are extinguishers periodically tested and certified by a competent agency as required?				
16.	Are fully stocked first aid kits located as required by regulation?				
17.	Are floor and wall openings, platforms, scaffolds and elevated walkways properly guarded?				
18.	Are fixed ladders having a fall distance of 20 feet or more in length guarded with caging or have a safe climbing device?				
19.	Are battery charging areas isolated from flammable/combustible storage or materials?				
20.	Is the battery charging area posted, have explosion-proof ventilation and isolated from electrical contacts or sparks?				
21.	Are rubber gloves, aprons, goggles and faceshield available & used for battery charging operations?				
22.	Is there an emergency eye wash station/shower present, clean and the system run and documented weekly as required?				
23.	Is the elevator regularly inspected & tested with inspection certification posted in the elevator car?				
24.	Is the maximum weight capacity posted in the car?				
25.	Are all elevator call buttons operable?				
26.	Is there emergency lighting and communications in the elevator car?				
27.	Has the elevator been load tested according to regulation?				

FIELD PROJECT SAFETY INSPECTION CHECKLIST		
SECTION TWO	TOOLS AND EQUIPMENT INSPECTIONS	Yes No
1.	Are portable ladders in good condition and properly stored?	
2.	Are metal ladders marked not to be used for electrical work?	
3.	Are extension ladders sound with all brackets free from damage?	
4.	Do any tools have mushroomed heads that need redressing?	
5.	Are hammer or other striking tool handles free from cracks or breaks?	
6.	Are regular inspections of all tools performed and those found defective taken out of service?	
7.	Are electric and fuel powered hand held tools regularly inspected, maintained and repaired?	
8.	Are grinders, portable & stationary properly guarded, grinding wheels dressed & tool rests properly adjusted?	
9.	Are cords on all electric tools free from damage, breaks & of the three wire conductors or double insulated?	
10.	Are pneumatic tools inspected, maintained and repaired?	
11.	Are air lines and couplings in good condition and are safety lashings used on all lines 100 PSI or greater operating pressure?	
12.	Is correct personal protective equipment for pneumatic tool operation readily available and used?	
13.	Are ropes, slings, hoists and hoisting hardware regularly inspected, maintained, repaired or replaced when needed?	
14.	Are compressed gas cylinders and welding units periodically inspected and tested?	
15.	Are gas welding regulators regularly inspected and tested by an authorized agency?	
16.	Are gas hoses inspected as used and equipped with flame back arresters?	
17.	Are gas cylinders separated, secured and have a proper discharge or storage tag?	
18.	Are electric welding leads free from cuts, chafing, frays or any possible physical damage?	
19.	Are regular and scheduled safety inspections performed on the project heavy equipment?	
20.	Does the project official file contain up to date equipment data cards?	
21.	Are fire extinguishers and first aid kits installed on heavy equipment as required by policy and regulation?	
22.	Are extinguishers fully charged and first aid kits fully stocked?	
23.	Are seat belts, ROPS, signs, lights and back up alarms installed as required by type of equipment?	
24.	Are guards installed on equipment or machinery moving parts to prevent hazardous contact?	
25.	Are pressure vessels routinely inspected and test results posted?	
26.	Are pressure regulators adequate for the pressure vessel and in operable condition?	
27.	Are pressure gauges installed on the receiver tank and on the air lines?	
28.	Are pressure vessels equipped with an operable safety relief valve?	
29.	Are boats regularly inspected and equipped with the required safety equipment on board?	
30.	Are all lights required operable and properly installed in accordance with Corps and USCG regulations?	
31.	Do personnel use PFD's while working in unguarded areas on or near the water?	
32.	Are all boat operators licensed to operate boats?	
33.	Are trailers used for transporting boats inspected and all lights and markings properly installed?	
34.	Are all lines and winches in good condition on the trailer?	

FIELD PROJECT SAFETY INSPECTION CHECKLIST		
SECTION THREE	ELECTRICAL INSPECTIONS	Yes No
1. Are all electrical systems properly grounded?		
2. Are ground fault circuit interrupters (GFCI) installed as required in wet locations and where portable power tools may be used?		
3. Are portable GFCI units used with portable generators or circuits not so equipped?		
4. Are extension cords inspected to assure they are free of damage or splices and are three wire grounding type double insulated?		
5. Are electric panels and circuits labeled and marked according to voltages?		
6. Are distribution panels of the type which can be locked out during maintenance and repairs?		
7. Is rubber insulated matting used at all distribution panels?		
8. Are required high voltage signs posted where required?		
9. Are transformer substations properly enclosed, locked and marked?		
10. Are transformers containing Polychlorinated Biphenyl's (PCBs) marked with the required decals?		
11. Are regular transformer inspections conducted and results officially documented?		
SECTION FOUR	VEHICLE INSPECTIONS	Yes No
1. Is a pre-operational inspection performed on the vehicle at the beginning of each shift or before use?		
2. Are the required safety inspections performed, i.e., A-inspection, 6 months or 6,000 miles and B-inspection, 12 months or 12,000 miles?		
3. Are seat belts, windshield wipers, mirrors, brakes, tires and vehicle lights in good condition?		
4. Are vehicle safety inspection records in file?		
5. Is the vehicle equipped with fire extinguishers and fire blankets?		
6. Are heavy trucks equipped with backup alarm?		
7. Are dump beds equipped with positive stops to hold the bed in the up position for servicing or repair?		
8. Are towing devices, including safety chains & trailer electrical connections, adequate for the intended use?		
9. Are parking brakes operable and capable of holding the vehicle fully loaded on the grade it is being used on?		
10. Is all window glass free of cracks, distortions and of the approved safety shatterproof type?		
11. Are trailers used to transport equipment equipped with breakaway safety system?		
12. Is the trailer marked for maximum weight capacity?		
13. Is the trailer equipped with all required lights?		
14. Are wheel chocks available for immediate use on trucks and trailers?		
15. Are chains and binders used on trailers in good condition?		
SECTION FIVE	ROADWAYS, SIGNS AND PUBLIC USE AREA INSPECTIONS	Yes No
1. Are roadways in good state of repair?		
2. Are road berms maintained to prevent or eliminate hazards?		
3. Are roadways and areas properly signed and marked?		
4. Is a safe access provided into public use areas?		
5. Is the public use area equipment well maintained?		
6. Is the playground equipment inspected daily?		
7. Is the playground equipment protected by an impact area and is it well maintained?		
8. Are toilet facilities adequate for visitor use and are they sanitarily maintained?		
9. Are handicap accesses provided for toilet facilities?		

FIELD PROJECT SAFETY INSPECTION CHECKLIST			
SECTION FIVE (cont'd)		ROADWAYS, SIGNS AND PUBLIC USE AREA INSPECTIONS	
	Yes	No	
10. Are picnic tables and shelters maintained to provide safe usage by visitors?			
11. Are refuse receptacles provided in public use areas?			
12. Is the area landscaping free of dead trees?			
SECTION SIX		REQUIRED PROCEDURES AND/OR PROGRAM INSPECTIONS	
Does the project have the following procedures and/or programs established?			
Yes	No		
<input type="checkbox"/>	<input type="checkbox"/>	a. Safe clearance procedures (Lockout/Tagout).	g. Supervisor safety training program.
<input type="checkbox"/>	<input type="checkbox"/>	b. Confined space entry procedures.	h. Medical surveillance program.
<input type="checkbox"/>	<input type="checkbox"/>	c. Hearing conservation program.	i. Defensive driving training program.
<input type="checkbox"/>	<input type="checkbox"/>	d. Respiratory protection program.	j. Hazard communication training program.
<input type="checkbox"/>	<input type="checkbox"/>	e. Hazard communication program.	k. First Aid and CPR training program.
<input type="checkbox"/>	<input type="checkbox"/>	f. Employee safety training program.	l. Emergency evacuation procedures.
SECTION SEVEN		REMARKS	
SAMPLE			

OFFICE SAFETY INSPECTION CHECKLIST			
Date of Inspection:	Inspector's Name:		
Project/Office:	Inspector's Signature:		
Responses: = No Deficiency X = Deficiency: Deficiencies should be described in the remarks section and anticipated dates of correction noted.			
SECTION I: The following items must be inspected monthly. (1st Month - 2nd Month - 3rd Month and Quarter)			
1. Is housekeeping maintained to prevent hazards of slips, trips and falls?	1st	2nd	3rd
2. Are flammable materials used in the office and are they properly stored?			
3. Is carpet or flooring material loose or damaged?			
4. Are aisles and passageways kept clear at all times?			
5. Are materials maintained at a minimum for fire prevention?			
6. Are office chairs and mats adequate and free of damage or excessive wear?			
7. Are drawers, file cabinets, desks and bookcases closed when not in use?			
8. Are electrical extension cords approved, in good condition, and positioned to prevent tripping hazards?			
9. Are coffee pots and other small appliances unplugged when not in use?			
10. Is a safe means of egress provided all workers in the event of an emergency?			
SECTION II: The following items must be inspected quarterly.			
1. Are work stations set-up to prevent excessive bending, leaning, twisting and over reaching by the worker while seated?			
2. Are computer stations set-up to accommodate the operator to prevent glare, stress and discomfort?			
3. Is lighting adequate at all work stations?			
4. Are floor receptacles positioned to prevent tripping hazards?			
5. Are electrical cords positioned so as not to create an electrical hazard?			
6. Is there a microwave oven in the office and is the area posted with warning for persons wearing pacemakers?			
7. Are office workers who frequently visit the field issued personal protective equipment for the job and is its use enforced?			
8. Are all injuries reported immediately and corrective actions promptly taken?			
9. Is the District Safety Policy posted on the official bulletin board?			
10. Are monthly safety meetings provided, documented and well attended?			
11. Is the District Smoking Policy enforced?			
SECTION III: Remarks.			
Supervisor's Name and Signature:			Date:

NOTICE NO. ____ OF
**UNSAFE OR UNHEALTHFUL
WORKING CONDITION**

(DO NOT REMOVE NOTICE UNTIL CONDITION IS ABATED)

For use of this form, see AR 385-10; the proponent agency is Office of The Inspector General.

1. UNIT INSTALLATION	3. DATE OF INSPECTION
2. OFFICIAL IN CHARGE OF WORKPLACE	4. STANDARD VIOLATED
5. LOCATION OF VIOLATION	
6. DESCRIPTION OF UNHEALTHFUL WORKING CONDITION	
7. RECOMMENDED ABATEMENT PROCEDURES	
a. Interim	
b. Final: Abatement should be completed by	
8. ADDITIONAL INFORMATION CONCERNING THIS VIOLATION CAN BE OBTAINED FROM	
TELEPHONE NO.	

DA FORM 4753
1 OCT 78

For use of this form, see AA 185-10 the requirement against a (Title of The Institute for Criminal

NAME OF INSTALLATION

[illegible]

1/ 1 se human materials (category I - imminent danger, Category II - Serious hazard, Category III - Moderate hazard, Category IV - the minimum hazard)

U.S. Government Printing Office: 1966-310-061/0606

INSTALLATION HAZARD ABATEMENT PLAN		
For use of this form, see AR 385-10; the proponent agency is Office of The Inspector General.		
1. PROJECT NO.	2. DATE PREPARED	3. DATE REVISED
4. ACTIVITY/ORGANIZATION	5. HAZARD LOCATION(S)	6. RISK ASSESSMENT CATEGORY
7. CITATION OF SPECIFIC OSHA AND OTHER STANDARD VIOLATED		
8. DESCRIPTION OF PROPOSED CORRECTIVE ACTION OR REMEDIAL MEASURES		
9. ESTIMATED COST OF CORRECTIVE ACTION \$ _____ APPROPRIATION PROGRAM ELEMENT _____ ESTIMATED _____ NO _____		
10. ESTIMATED ADDITIONAL OPERATING AND MAINTENANCE COSTS, IF ANY		
11. DESCRIPTION OF INTERIM HAZARD CONTROL MEASURES IN EFFECT		
12. OTHER RELEVANT INFORMATION		
13. ESTIMATED ABATEMENT COMPLETION DATE		
PREPARED BY	APPROVED BY	

DA FORM 4756
1 OCT 78

APPENDIX G
Team Member Reports of Unsafe or Unhealthful Working Conditions

1. Purpose. This appendix establishes procedures for reporting, inspecting, and resolving team member complaints alleging unsafe or unhealthful working conditions.

2. References. E.O. 11807
Code of Federal Regulations, Title 19,
Parts 1960, Department of Labor
Regulations on Federal Worker
Safety and Health Provisions

3. Definitions.

a. "Safety Officer" means that individual responsible for the management of the District's safety and occupational health program.

b. "Safety and Health Inspector" means any person authorized to perform inspections for the purpose of this regulation. The person may be the District Safety Officer or a District technical or professional team member.

c. "Imminent danger" means any condition or practice of employment which could reasonably be expected to cause death or serious physical harm immediately.

4. General. Many safety and occupational health problems can be eliminated as soon as they are identified. This can be accomplished most rapidly when there is an open channel of communication between team leaders and team members. The soundness of the safety and occupational health program and the team leader-member relationship at each installation should be such that any team member may report an unsafe or an unhealthful condition to the team members and expect quick action in resolving the condition or setting up a plan of action to eliminate it. Employees do not have to await the outcome of oral reports should they desire to file a written report pursuant to the provisions of this regulation. This regulation is intended to supplement oral reports of unsafe and unhealthful conditions made by team members through supervisory channels; it is not intended to act as a substitute for such reports.

5. Procedures for Filing Reports.

a. Any team member, or representative of team members, who believes that an unsafe or unhealthful working condition exists at his place of employment, is authorized to request an inspection of such workplace by

giving notice to the District Safety Officer. Any such notice shall be prepared on DA Form 4755 (Report of Alleged Unsafe or Unhealthful Working Conditions) (see p. G-3). In case of imminent danger, the team member is permitted to make a verbal report or report by telephone or telegraph to the Safety Officer and reduce to writing as soon as practicable thereafter.

b. The report should be signed; however, anonymous reports will be investigated in the same manner as signed reports.

c. Persons who request anonymity will not be revealed by the Safety Officer to anyone other than necessary persons. Such persons could be District staff members, Safety & Occupational Health Office personnel, or safety and health inspectors.

d. Reports will be submitted directly to the Safety Officer bypassing other elements.

e. All reports will be investigated by a safety and health inspector. Reports that appear to involve imminent danger will get priority attention. If an imminent danger situation exists, the inspector will follow the procedures outlined in paragraph 6.

f. The Safety Officer will notify the originator of the report, if known, of the results of the investigation. The notification will be written and furnished within 10 working days following receipt of the report. If the 10 workday suspense cannot be met, the originator will be provided an interim response. If it is determined that a hazard exists, the reply will include a summary of the actions to be taken and the anticipated date that the corrective action will be completed. If it is determined that a hazard does not exist, the reply to the team member will include the basis for that information. This reply will encourage informal contact by the team member with the safety and health officials, if additional explanations are desired. It will also inform the individual of his right of appeal as outlined in paragraph 5.g. If the originator of the complaint is anonymous, all team members at the concerned work site will be informed by posting the reply at a place readily accessible to all concerned team members or by providing each team member with a copy of the reply.

g. If the originator is dissatisfied with the Safety Officer's response, the originator may appeal to the District Commander. The District Commander will review the

finding and take action as appropriate. If the originator is dissatisfied with the District Commander's response, the originator may then appeal to the Chief of the Safety & Occupational Health Office of the Ohio River Division. If still dissatisfied, the appeal will be transmitted through channels to the Chief of the Corps of Engineers Safety & Occupational Health Office, HQDA (CESO), WASH DC 30214. The USACE Chief of Safety & Occupational Health Office will review the findings, investigate as necessary, and verify the appropriateness of the response. If the report of hazard is judged unfounded, a reply to the originator rejecting the appeal will state the basis for rejection and will advise of the right to appeal to the Army Designated Occupational Safety and Health Official, DAPE-HRS, WASH DC 20315. Upon receipt of an appeal, the Office of the Inspector General of the Army will review the case and reply to the originator with a statement of findings. If the appeal is rejected, the reply will include a description of the originator's appeal rights to the Army Designated Occupational Safety Official.

h. Appeal review levels prescribed in 5.g. above, will not be bypassed.

i. Reviews will normally be completed within 20 workdays. If an appeal is not acted upon within 20 workdays, team members may appeal to the next higher level for review.

6. Imminent Danger. When an imminent danger situation is identified, the immediate team leader and activity head will be notified as soon as possible. The inspector will provide technical advice to the team leader on the scene, who will correct the condition or withdraw team members from exposure. If the hazard cannot be immediately eliminated, the inspector will notify the Safety Officer who will secure approval of the District Commander, or an authorized representative, for measures to be taken to prevent further team members exposure to the hazard. A record will be maintained in the Safety & Occupational Health Office of imminent danger hazards from which team members have been withdrawn as an interim measure. The individual performing the inspection is responsible for preparing the report. This record will include:

a. The hazard location(s).

b. Risk assessment category.

c. Citation of specific OSHA standard, paragraph of EM 385-1-1, or other standard, violated.

d. Description of hazard.

e. Description of interim hazard control measures in effect.

f. Description of proposed corrective action.

g. Estimated abatement completion date.

7. Participation Safeguard.

a. No team member will be subject to restraint, interference, coercion, discrimination or reprisal by virtue of such team member's participation in filing of reports of unsafe or unhealthful working conditions.

b. Team members who feel that they have not been treated fairly because of participating in this program have the right to present their complaints, grievances and appeals for prompt consideration and equitable decisions as outlined in HEDR 690-1-2 (Handbook of Civilian Personnel Regulations); or in the appropriate agreement with the American Federation of Government Employees.

c. Team leaders who are proven to have treated team members unfairly because of the team member's participation in this program shall be subject to disciplinary action.

8. Contact Information.

a. The District Safety Officer, may be contacted by mailing reports to:

Department of the Army
Corps of Engineers
ATTN: Chief, CEORH-SO
502 Eighth Street
Huntington, WV 25701-2070

b. The Safety Officer may be contacted by telephone by calling (304) 529-5673 or 529-5094.

EMPLOYEE REPORT OF ALLEGED UNSAFE OR UNHEALTHFUL WORKING CONDITIONS <small>For use of this form, see AR 385 10 the proponent agency is Office of The Inspector General</small>								
<small>This form is provided for the assistance of any complainant and is not intended to constitute the exclusive means by which a complaint may be registered with the local Safety Office (Ref OSHA Poster on rights of employees and their representatives)</small>								
<p>The undersigned (check one)</p> <p><input type="checkbox"/> Employee <input type="checkbox"/> Representative of employees <input type="checkbox"/> Other (Specify) _____</p> <p>believes that a job safety or health hazard exists at the following place of employment</p> <p>Does this hazard/s immediately threaten serious physical harm? <input type="checkbox"/> Yes <input type="checkbox"/> No If "yes" checked, immediately contact your supervisor or safety representative.</p> <p>Name of official in charge _____ Telephone _____</p> <p>Operation/Activity _____</p> <p>Exact location of worksite _____</p> <p>1. Kind of operation _____</p> <p>2. Describe briefly the hazard which exists there including the appropriate number of employees exposed to or threatened by such hazard</p> <p>3. List by number and/or name the particular occupational safety and health standard/s which may have been violated, if known</p> <p>4. (a) To your knowledge, has this hazard been the subject of any union management grievance or have you (or anyone you know) otherwise called it to the attention of, or discussed it with the employer or any representative thereof? _____</p> <p> (b) If so, please give the results thereof, including any efforts by management to eliminate or reduce the severity of the hazard</p> <p>5. Please indicate your desire:</p> <p><input type="checkbox"/> I do not want my name revealed to the official in charge.</p> <p><input type="checkbox"/> My name may be revealed to the official in charge.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"><tr><td style="width: 50%; padding: 5px;">WORK LOCATION</td><td style="width: 20%; padding: 5px;">TELEPHONE NO.</td><td style="width: 30%; padding: 5px;">DATE</td></tr><tr><td style="padding: 5px;">TYPED OR PRINTED NAME OF EMPLOYEE OR EMPLOYEE REPRESENTATIVE</td><td colspan="2" style="padding: 5px;">SIGNATURE</td></tr></table>			WORK LOCATION	TELEPHONE NO.	DATE	TYPED OR PRINTED NAME OF EMPLOYEE OR EMPLOYEE REPRESENTATIVE	SIGNATURE	
WORK LOCATION	TELEPHONE NO.	DATE						
TYPED OR PRINTED NAME OF EMPLOYEE OR EMPLOYEE REPRESENTATIVE	SIGNATURE							

DA FORM 4755
1 OCT 78

U.S. Government Printing Office: 1978—605 041 150

APPENDIX H Safety in Contract Work

1. Policy. The accident prevention provisions are as much a part of the contract as any other provision set forth in the contract. It is mandatory that the contractor comply with the safety and occupational health requirements set forth and that he or she assume responsibility for compliance by all subcontractors.

2. Contract Specifications.

a. Insofar as it is appropriate and practical, safety and occupational health requirements will be integrated into the technical specifications of the contract.

b. Every contractor will be required to comply with applicable portions of EM 385-1-1, Safety and Health Requirements Manual.

c. In addition to EM 385-1-1, the contractor will be responsible for complying with the Occupational Safety and Health Act as enforced in the particular state where the job is located.

3. Special Provisions.

a. Special provisions on safety and occupational health shall be included in contract specifications as needed for each contract. Analysis of each contract will be made by the Safety & Occupational Health Office to determine the major safety and occupational health hazards to be emphasized by the special provisions.

b. Engineering Division will furnish contract specifications to the Safety & Occupational Health Office as they are distributed to other elements for review prior to bid opening. The Safety & Occupational Health Office, with the concurrence of Construction Division, will prepare the special provisions for safety and occupational health and submit them to Engineering Division for inclusion in the contract specifications.

4. Contractor's Accident Prevention Plan.

a. The District Commander will send a letter to each contractor immediately following a contract award to ensure cooperation and complete understanding in the management of the safety and occupational health program on the project.

b. Contract general provisions provide that the contractor submit in writing an Accident Prevention Plan. Accident Prevention Plans must be submitted promptly

after a contract has been awarded in order for the Safety & Occupational Health Office to review them prior to the preconstruction conference.

c. The intent of the Accident Prevention Plan is for the contractor to state the specific ways by which he proposes to include the Corps of Engineers General Safety Requirements and other applicable safety and occupational health standards into his operating methods. The proposed action in the plan must not be stated in general terms, but will be specific proposals for controlling mishaps on that particular job.

d. All Accident Prevention Plans must be dated and signed, and must state the name of the contractor team member responsible for safety and occupational health.

e. Safety and occupational health-related topics to be covered at the pre-construction conference and details concerning the Accident Prevention Plan are outlined in EP 415-1-260 (Resident Engineer Management Guide), Section X-4.

5. Contractor's Activity Hazard Analysis (AHA).

a. Prior to beginning each major phase of work, an Activity Hazard Analysis (phase plan) shall be prepared by the contractor for that phase. The analysis will address the hazards for each activity performed in that phase and will present the procedures and safeguards necessary to eliminate the hazards or reduce the risk to an acceptable level. A phase is defined as an operation involving a type of work presenting hazards not experienced in previous operations or where a new subcontractor or work crew is to perform work. The analysis will be discussed by the contractor and government on-site representatives. Work will not proceed on that phase until the AHA (phase plan) has been approved by the Contracting Officer's Representative.

b. All AHA's shall be reviewed, understood, and complied with by all team members working on the activity, prior to the initiation of the activity.

c. Specific information and examples of how to write an AHA (JHA) are included herein in Appendix E.

6. Inspection of Plant and Equipment.

a. The contractor or his designated team member shall inspect his plant and construction equipment prior to it being placed in operation (reference paragraph 18.A.01., EM 385-1-1). The following forms, as appropriate, will be

APP H
CEORHR 385-2-3
18 Sep 92

completed by a competent person certified to be in safe operating conditions, and submitted to the Government representative in charge:

CEORH Form 2824 (Test); Safety Inspection Checklist For Crawler Tractors, Dozers, Scrapers, Motor Graders, Backhoes, Heavy Haulage Units

CEORH Form 2824-1 (Test); Daily Pre-Operational Checklist For Crawler Tractors, Dozers, Scrapers, Motor Graders, Backhoes, Heavy Haulage Units

CEORH Form 2825 (Test); Safety Inspection Checklist For Core Drill Rigs

CEORH Form 2825-1 (Test); Daily Pre-Operational Checklist For Core Drill Rigs

CEORH Form 2826 (Test); Safety Inspection Checklist For Cranes (see pages H-3 – H-14)

The Daily Pre-Operational Checklists shall be completed daily at the beginning of each shift or before each usage if the equipment is not used daily. The forms will be available for review by the Government Representative.

b. Equipment not approved by the inspection or preoperational check is not permitted on the job (reference paragraph 18.A.04., EM 385-1-1). Except in emergencies, hoisting equipment is not permitted to lift heavier loads than those which have been rated as safe by actual tests.

c. Performance tests may be waived by the District Commander or his authorized representative on short-term rental hoisting equipment. Rated capacity of rental equipment is to be 150 percent of maximum anticipated load.

d. Equipment will be reinspected and the appropriate inspection form prepared annually. Exception to this will be hoisting equipment which will be inspected every six months or prior to unusual or critical lifts. Additionally, all construction type equipment will be reinspected prior to use and the appropriate form prepared anytime equipment is removed then subsequently returned to the job site.

e. Performance tests of hoisting equipment will be done in accordance with paragraph 18.D. – 18.G., EM 385-1-1. The safe allowable load computed will be entered on CEORD Form 1094R (Crane Load Rating Chart) (see p. H-15), which will be placed in the operator's cab.

**SAFETY INSPECTION CHECKLIST FOR CRAWLER TRACTORS, DOZERS, SCRAPERS,
MOTOR GRADERS, BACKHOES, HEAVY HAULAGE UNITS
U.S. Army Engineer, Huntington District**

INSTRUCTIONS

SECTION 1 - GENERAL INFORMATION:

- Date - Enter month, day, and year of Safety Inspection.
- Owner/User - Enter designated ownership of equipment (Corps, Corps leased or Contractor by name).
- Contract Number - Contractors enter the respective contract number.
- Type of Equipment - Enter Ford 515 Backhoe, JD 450 Bulldozer, etc.
- Number - Enter equipment number Contractor has issued on large scale operations.
- Inspected By - Enter signature and title of Corps or Contractor inspector (Corps inspector may be a maintenance leader, maintenance mechanic or operator and a Contractor inspector may be a mechanic, operator or service person).
- Reviewed By - Enter signature and title of Corps or Contractor reviewer (Corps reviewer may be a maintenance leader, maintenance mechanic, manager or supervisor and a Contractor reviewer may be the mechanic, shift leader, foreman or superintendent). Before a signature and title of Corps or Contractor reviewer is entered the checklist must be reviewed and the equipment spot checked unannounced to ensure inspections are performed.

SECTION 2 - SAFETY INSPECTION CHECKLIST: Check Yes, No or Not Applicable if question or statement does not apply.

SECTION 3 - RECEIPT OF ACKNOWLEDGMENT: Enter signature, title and date signed by personnel acknowledging receipt of the checklist. If Corps personnel was the inspector and reviewer a Corps manager, supervisor or responsible employee will sign the receipt of acknowledgment. If a Contractor personnel was the inspector and reviewer the checklist becomes a part of the official project file and a copy is furnished to the Contracting Officer Representative (COR), the COR will then sign the receipt of acknowledgment. The COR may request a copy of the checklist at any time. The COR or a representative may perform an unannounced spot check inspection to ensure compliance of safety inspection requirements. To determine if inspector and reviewer are Corps or Contractor personnel see SECTION 1, item f. and g.

SECTION 1

GENERAL INFORMATION

a. Date	b. Owner/User	c. Contract Number
d. Type of Equipment	e. Number	
f. Inspected By (Signature) (Title)	Reviewed By (Signature) (Title)	

SECTION 2

SAFETY INSPECTION CHECKLIST

NOTE: Reference U.S. Army Corps of Engineers Safety and Health Requirements Manual (EM 385-1-1, April 1981, as revised). (Equipment must be in full compliance with checklist and contract requirements.)	Yes	No	Not Appl
1. Is protection (grills, screens, canopies) provided to shield the operator from falling or flying objects?			
2. Are adequate rollover protection and seat belts provided?			
3. Is a safe means of 3 point contact access to cab or operator's compartment provided—steps, grab bars, non-slip surfaces, etc.?			
4. Are required head and tail lights, flashing lights and slow moving vehicle signs provided and properly positioned?			
5. Is the parking and service brake system capable of holding the equipment fully loaded on the grade of operation?			
6. Does the unit have an emergency brake system?			
7. Does the emergency brake system work automatically when regular brakes fail?			
8. Can the emergency brake system be activated from the cab or operator's position?			
9. Are fuel tanks located so that spills or overflows do not run on the engine or electrical systems?			
10. Is the reverse alarm signal operable?			
11. Are cabs equipped with distortion free, shatter-proof or safety glass?			
12. Are exhausts located so that discharges do not endanger or obstruct the view of the operator?			
13. Are moving parts, shafts, pulleys and belts adequately guarded?			
14. Are any of the units structural members bent, cracked or otherwise show signs of physical damage?			
15. Are track rails, grousers, truck rollers, idlers and sprockets in good condition free from excessive wear, cracks, loose bolts or pins?			

	Yes	No	Not Appl
16. Are hydraulic lines and cylinders adequately guarded and free of physical damage?			
17. Are tires on tire mounted equipment free from excessive wear, breaks & of proper & equal size?			
18. Is the manufacturer recommended tire inflation pressure maintained?			
19. Are all towing devices properly mounted and in good condition?			
20. Does the equipment have at least one dry chemical or CO ₂ fire extinguisher with minimal rating of 5 B:C available? (Corps owned or leased equipment must have extinguisher installed on the equipment.)			
21. Is a 16 unit (minimum) first aid kit on the equipment or on the job site readily available? Corps owned or leased equipment must have first aid kits installed on the equipment.			
22. Are all instruments, ammeters, pressure gauges, temperature gauges, tachometers or other critical systems operable and in good condition?			
23. Are all operating levers, pedals, etc., in good operating condition?			
24. Do all modifications, replacement parts and/or repairs to the equipment maintain the same safety factor as originally designed and manufactured?			
25. Is the equipment equipped with outriggers or leveling devices and are they in operable condition?			
26. Is the equipment operations manual available to the operator?			
27. Remarks:			
<h1>SAMPLE</h1>			
SECTION 3 RECEIPT OF ACKNOWLEDGMENT			
<div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div>Receipt Acknowledged by: (Signature)</div> <div>(Title)</div> <div>(Date)</div> </div>			

**DAILY PRE-OPERATIONAL CHECKLIST FOR CRAWLER TRACTORS, DOZERS, SCRAPERS,
MOTOR GRADERS, BACKHOES, HEAVY HAULAGE UNITS
U.S. Army Engineer, Huntington District**

INSTRUCTIONS

SECTION 1 - GENERAL INFORMATION:

- a. Date - Enter month, day, and year of Safety Inspection.
- b. Owner/User - Enter designated ownership of equipment (Corps, Corps leased or Contractor by name).
- c. Contract Number - Contractors enter the respective contract number.
- d. Type of Equipment - Enter Ford 515 Backhoe, JD 450 Bulldozer, etc.
- e. Number - Enter equipment number Contractor has issued on large scale operations.
- f. Inspected By - Enter signature and title of Corps or Contractor inspector (Corps inspector may be a maintenance leader, maintenance mechanic or operator and a Contractor inspector may be a mechanic, operator or service person).
- g. Reviewed By - Enter signature and title of Corps or Contractor reviewer (Corps reviewer may be a maintenance leader, maintenance mechanic, manager or supervisor and a Contractor reviewer may be the mechanic, shift leader, foreman or superintendent). Before a signature and title of Corps or Contractor reviewer is entered the checklist must be reviewed and the equipment spot checked unannounced to ensure inspections are performed.

SECTION 2 - DAILY PRE-OPERATIONAL CHECKLIST: Check Yes, No or Not Applicable if question or statement does not apply.

SECTION 3 - RECEIPT OF ACKNOWLEDGMENT: Enter signature, title and date signed by personnel acknowledging receipt of the checklist. If Corps personnel was the inspector and reviewer a Corps manager, supervisor or responsible employee will sign the receipt of acknowledgment. If a Contractor personnel was the inspector and reviewer the checklist becomes a part of the official project file and a copy is furnished to the Contracting Officer Representative (COR), the COR will then sign the receipt of acknowledgment. The COR may request a copy of the checklist at any time. The COR or a representative may perform an unannounced spot check inspection to ensure compliance of safety inspection requirements. To determine if inspector and reviewer are Corps or Contractor personnel see SECTION 1, item f. and g.

SECTION 1

GENERAL INFORMATION

a. Date	b. Owner/User	c. Contract Number
d. Type of Equipment	e. Number	
f. Inspected By	(Signature) (Title)	Reviewed By (Signature) (Title)

SECTION 2

DAILY PRE-OPERATIONAL CHECKLIST

NOTE: Reference U.S. Army Corps of Engineers Safety and Health Requirements Manual (EM 385-1-1, April 1981, as revised). (Equipment must be in full compliance with checklist and contract requirements.)	Yes	No	Not Appl
1. Are the rollover protection system and seat belts in good condition?			
2. Are all lights operable? Service, warning, signal and tail.			
3. If equipment is used on highways or streets are slow moving vehicle signs installed? (Must be installed prior to use on highways or streets.)			
4. Is safe 3-point access provided the operator to the operating compartment?			
5. Is proper protection provided the operator? Grills, screens, canopies, etc.			
6. Are brakes (service and parking) operable?			
7. Are the reverse alarm signals operable?			
8. Is cab glass free from breaks, cracks or distortion?			
9. Are shields, guards, and covers in place?			
10. Are air tanks drained and in good condition?			
11. Is there any physical damage evident to the unit?			
12. Are tracks in good condition and properly adjusted?			
13. Is there any evidence of damage to undercarriage and track mountings?			
14. Are the blade, C-frame, hydraulic lines and cylinders in good operating condition?			
15. Are all towing devices adequate and properly mounted?			
16. Are the winch unit and cables in good working condition?			
17. Are all tires and wheels in good condition and evenly matched?			

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SAMPLE

SAFETY INSPECTION CHECKLIST FOR CORE DRILL RIGS
U.S. Army Engineer, Huntington District

INSTRUCTIONS

SECTION 1 - GENERAL INFORMATION:

- a. Date - Enter month, day, and year of Safety Inspection.
- b. Owner/User - Enter designated ownership of equipment (Corps, Corps leased or Contractor by name).
- c. Contract Number - Contractors enter the respective contract number.
- d. Type of Equipment - Enter Ford 515 Backhoe, JD 450 Bulldozer, etc.
- e. Number - Enter equipment number Contractor has issued on large scale operations.
- f. Inspected By - Enter signature and title of Corps or Contractor inspector (Corps inspector may be a maintenance leader, maintenance mechanic or operator and a Contractor inspector may be a mechanic, operator or service person).
- g. Reviewed By - Enter signature and title of Corps or Contractor reviewer (Corps reviewer may be a maintenance leader, maintenance mechanic, manager or supervisor and a Contractor reviewer may be the mechanic, shift leader, foreman or superintendent). Before a signature and title of Corps or Contractor reviewer is entered the checklist must be reviewed and the equipment spot checked unannounced to ensure inspections are performed.

SECTION 2 - SAFETY INSPECTION CHECKLIST: Check Yes, No or Not Applicable if question or statement does not apply.

SECTION 3 - RECEIPT OF ACKNOWLEDGMENT: Enter signature, title and date signed by personnel acknowledging receipt of the checklist. If Corps personnel was the inspector and reviewer a Corps manager, supervisor or responsible employee will sign the receipt of acknowledgment. If a Contractor personnel was the inspector and reviewer the checklist becomes a part of the official project file and a copy is furnished to the Contracting Officer Representative (COR), the COR will then sign the receipt of acknowledgment. The COR may request a copy of the checklist at any time. The COR or a representative may perform an unannounced spot check inspection to ensure compliance of safety inspection requirements. To determine if inspector and reviewer are Corps or Contractor personnel see SECTION 1, item f. and g.

SECTION 1 GENERAL INFORMATION			
a. Date	b. Owner/User	c. Contract Number	
d. Type of Equipment	e. Number		
f. Inspected By	(Signature) (Title)	Reviewed By	(Signature) (Title)

SECTION 2 SAFETY INSPECTION CHECKLIST			
NOTE: Reference U.S. Army Corps of Engineers Safety and Health Requirements Manual (EM 385-1-1, April 1981, as revised). (Equipment must be in full compliance with checklist and contract requirements.)	Yes	No	Not Appl
1. Is a notice of minimum overhead powerline distances posted at or near the operator's position?			
2. Is there an emergency kill switch or similar device at drill operating (including cathead) locations to stop or de-energize the equipment in the event of an emergency?			
3. Are wheel chocks available and adequate for the equipment?			
4. Are fuel tanks located so that spills or overflows will not come in contact with engine exhaust or electrical systems?			
5. Are fuel containers used with the equipment approved safety containers?			
6. Are towing devices structurally adequate and properly mounted?			
7. Do all modifications, replacement parts and/or repairs to the equipment maintain the same factor of safety as originally designed?			
8. Are any structural members of the rig bent, have cracked welds or otherwise show signs of damage?			
9. Is the reverse alarm signal in proper operating condition?			
10. Is the equipment operations manual readily accessible to the operator?			
11. Are hand holds and/or railing in good condition?			
12. Are rope sockets (wire & manila), hoisting plugs, thimbles & clips adequate and properly applied? NOTE: Huntington District Policy: The use or presence of slip rings is prohibited on the job site.			
13. Are hooks, sheaves, sheave pins, guides, safety clips and other fittings in good condition?			
14. Are running lines adequately guarded to prevent hazardous contact by personnel?			

	Yes	No	Not Appl
15. Are gears, belts, drive chains, shafts, pulleys, spindles, drums and other reciprocating or rotating parts adequately guarded?			
16. Is the cathead free of rope wear grooves, burrs or other signs of physical damage? If a groove forms greater than 1/8" (3mm), the cathead should be replaced.			
17. Are the following motor vehicle features in proper working condition? a. Directional signals front and rear. b. Two headlights; one each side; one red taillight and one red or amber stop light on each side for operation between sunset and sunrise when necessary.			
18. Are brakes (service and parking) in good operating condition?			
19. Tire and wheel inspection to include but not limited to: a. Objects wedged between duals or imbedded in tires. b. Mismatched duals (different sizes). c. Missing wheel lugs. d. Cuts, tears, breaks and abnormal or uneven wear of tires. e. Damaged or poor fitting rims or rim flanges. f. Burns or welds on wheel rims.			
20. Is there at least one 10 lb. ABC multi-purpose fire extinguisher on site, distinctly marked with unobstructed accessibility?			
21. Is there a minimum of 2 persons certified in First Aid and CPR on each shift? (Where job is in remote location.)			
22. Is a 16-unit First Aid kit (minimum) provided and readily accessible?			
23. Is a daily pre-operation inspection made and documented?			
24. Are the catlines, cat fittings, clamps and swedged rope free of excessive wear or signs of physical damage?			
25. Is the exhaust discharge directed to prevent injury to the operator and workers?			
26. Is the window glass shatterproof or safety type glass and free of cracks or distortions?			
27. Remarks:			
SECTION 3 RECEIPT OF ACKNOWLEDGMENT			
<div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div> Receipt Acknowledged by: _____ (Signature) </div> <div> _____ (Title) </div> <div> _____ (Date) </div> </div>			

DAILY PRE-OPERATIONAL CHECKLIST FOR CORE DRILL RIGS
U.S. Army Engineer, Huntington District

INSTRUCTIONS

SECTION 1 - GENERAL INFORMATION:

- a. Date - Enter month, day, and year of Safety Inspection.
- b. Owner/User - Enter designated ownership of equipment (Corps, Corps leased or Contractor by name).
- c. Contract Number - Contractors enter the respective contract number.
- d. Type of Equipment - Enter Ford 515 Backhoe, JD 450 Bulldozer, etc.
- e. Number - Enter equipment number Contractor has issued on large scale operations.
- f. Inspected By - Enter signature and title of Corps or Contractor inspector (Corps inspector may be a maintenance leader, maintenance mechanic or operator and a Contractor inspector may be a mechanic, operator or service person).
- g. Reviewed By - Enter signature and title of Corps or Contractor reviewer (Corps reviewer may be a maintenance leader, maintenance mechanic, manager or supervisor and a Contractor reviewer may be the mechanic, shift leader, foreman or superintendent). Before a signature and title of Corps or Contractor reviewer is entered the checklist must be reviewed and the equipment spot checked unannounced to ensure inspections are performed.

SECTION 2 - DAILY PRE-OPERATIONAL CHECKLIST: Check Yes, No or Not Applicable if question or statement does not apply.

SECTION 3 - RECEIPT OF ACKNOWLEDGMENT: Enter signature, title and date signed by personnel acknowledging receipt of the checklist. If Corps personnel was the inspector and reviewer a Corps manager, supervisor or responsible employee will sign the receipt of acknowledgment. If a Contractor personnel was the inspector and reviewer the checklist becomes a part of the official project file and a copy is furnished to the Contracting Officer Representative (COR), the COR will then sign the receipt of acknowledgment. The COR may request a copy of the checklist at any time. The COR or a representative may perform an unannounced spot check inspection to ensure compliance of safety inspection requirements. To determine if inspector and reviewer are Corps or Contractor personnel see SECTION 1, item f. and g.

SECTION 1 GENERAL INFORMATION			
a. Date	b. Owner/User	c. Contract Number	
d. Type of Equipment	e. Number		
f. Inspected By	(Signature) (Title)	Reviewed By	(Signature) (Title)

SECTION 2 DAILY PRE-OPERATIONAL CHECKLIST			
NOTE: Reference U.S. Army Corps of Engineers Safety and Health Requirements Manual (EM 385-1-1, April 1981, as revised). (Equipment must be in full compliance with checklist and contract requirements.)	Yes	No	Not Appl
1. Is a list of emergency assistance telephone numbers readily available on site?			
2. Check tires and wheels to determine if they are the same size and in good condition?			
3. Check tire inflation pressure to assure manufacturer recommended pressure.			
4. Is the drill mast, cable, cathead, catlines, and sheaves in good condition and proper alignment?			
5. Check operating levers, gauges, and switches to determine if they are in operating condition?			
6. Is the hoisting plug adequate for the drill tools being used? (NOTE: Huntington District Policy, the use or presence of slip rings is prohibited on site.)			
7. Is the drill unit, drill steel and other drill tools in good condition?			
8. Are reverse alarms and safety switches operable?			
9. Are oil levels, engine, hydraulic, transmission and gears as recommended?			
10. Is the radiator coolant level acceptable?			
11. Are all lights operable and in good condition?			
12. Are brakes (parking and service) operable?			
13. Are hydraulic lines and hoses free from damage or excessive wear?			
14. Is a notice of overhead powerline distance requirements posted?			
15. Is a first aid kit available with the unit? (16-unit minimum)			
16. Is an approved fire extinguisher available on the unit? (10 lb. ABC minimum)			

	Yes	No	Not Appl
17. Is the window glass free from breaks or distortion?			
18. Is housekeeping in good order on and around the rig?			
19. Is lubrication according to manufacturer recommendation?			
20. Are the fittings, clamps and swedges in good condition?			
21. Are hand holds, steps, grab bars, platform, etc., in good condition?			
22. Is the emergency shutoff switch operable?			
23. Are air and water lines in good condition?			
24. Is personal protective equipment provided and of the approved type?			
25. Is there a minimum of 2 persons on each shift certified in first aid and CPR? (Where jobs are in remote areas.)			
26. Is the cathead showing excessive wear or grooves?			
27. Remarks:			
<h1>SAMPLE</h1>			
SECTION 3 RECEIPT OF ACKNOWLEDGMENT			
<div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div>Receipt Acknowledged by: (Signature)</div> <div>(Title)</div> <div>(Date)</div> </div>			

SAFETY INSPECTION CHECKLIST FOR CRANES
U.S. Army Engineer, Huntington District

INSTRUCTIONS

SECTION 1 - GENERAL INFORMATION:

- a. *Date* - Enter month, day, and year of Safety Inspection.
- b. *Owner/User* - Enter designated ownership of equipment (Corps, Corps leased or Contractor by name).
- c. *Contract Number* - Contractors enter the respective contract number.
- d. *Type of Equipment* - Enter Ford 515 Backhoe, JD 450 Bulldozer, etc.
- e. *Number* - Enter equipment number Contractor has issued on large scale operations.
- f. *Inspected By* - Enter signature and title of Corps or Contractor inspector (Corps inspector may be a maintenance leader, maintenance mechanic or operator and a Contractor inspector may be a mechanic, operator or service person).
- g. *Reviewed By* - Enter signature and title of Corps or Contractor reviewer (Corps reviewer may be a maintenance leader, maintenance mechanic, manager or supervisor and a Contractor reviewer may be the mechanic, shift leader, foreman or superintendent).
Before a signature and title of Corps or Contractor reviewer is entered the checklist must be reviewed and the equipment spot checked unannounced to ensure inspections are performed.

SECTION 2 - SAFETY INSPECTION CHECKLIST: Check Yes, No or Not Applicable if question or statements does not apply.

SECTION 3 - RECEIPT OF ACKNOWLEDGMENT: Enter signature, title and date signed by personnel acknowledging receipt of the checklist. If Corps personnel was the inspector and reviewer a Corps manager, supervisor or responsible employee will sign the receipt of acknowledgment. If a Contractor personnel was the inspector and reviewer the checklist becomes a part of the official project file and a copy is furnished to the Contracting Officer Representative (COR), the COR will then sign the receipt of acknowledgment. The COR may request a copy of the checklist at any time. The COR or a representative may perform an unannounced spot check inspection to ensure compliance of safety inspection requirements. To determine if inspector and reviewer are Corps or Contractor personnel see SECTION 1, item f. and g.

SECTION 1 GENERAL INFORMATION			
a. Date	b. Owner/User	c. Contract Number	
d. Type of Equipment	e. Number		
f. Inspected By	(Signature)	(Title)	Reviewed By (Signature) (Title)

SECTION 2 SAFETY INSPECTION CHECKLIST			
NOTE: Reference U.S. Army Corps of Engineers Safety and Health Requirements Manual (EM 385-1-1, April 1981, as revised). (Equipment must be in full compliance with checklist and contract requirements.)	Yes	No	Not Appl
1. Is a notice of minimum overhead powerline distances posted at operator's position? (These notices can be obtained from the Safety and Occupational Health Office for Corps owned or leased cranes.)			
2. Are load charts posted in view of the operator?			
3. Is a visual list of standard hand signals posted in the cab?			
4. Is the crane equipped with a properly functioning boom angle, leveling or other indicator within the operator's view?			
5. Are shock absorbing boom stops installed on cable supported booms?			
6. Is there a set of operator manual(s) (instructions) located in the crane?			
7. Is the crane equipped with an anti 2-block warning feature which functions for all points of 2-blocking? (Ref. Interim Change to EM 385-1-1, Sec. 18.D.10 for exemption & 18.D.11 for personnel hoisting.)			
8. Are any structural members bent, have cracked welds, rusted or otherwise show signs of physical damage?			
9. Do the jibs have positive stops to prevent their movement?			
10. Are boom foot pins, connector pins and other connecting features in good condition?			
11. Are sheaves, sheave pins, hooks, guides, safety clips and other fittings in good condition?			
12. Is the machine equipped with a load drum positive holding device?			
13. Is the braking equipment capable of stopping, lowering and holding a load of at least the full test load?			

	Yes	No	Not Appl
14. If the crane is used for personnel hoisting, is it of a power down/power up type crane? (Required for personnel hoisting.)			
15. Are moving parts, drums, gears, shafts and belts guarded?			
16. Are steps, ladders, and guard rails provided for safe footing and access?			
17. Is there sufficient cable to allow two full wraps on the drum at all working positions?			
18. Is the fuel tank located so that spills or overflows will not run into the cab, on the engine or electrical systems?			
19. Is there evidence of excessive wear or damage to cables and clamps?			
20. Are all windows in the crane cab unbroken distortion free shatterproof or safety glass?			
21. Are brakes (service or parking) on wheeled equipment in good operating condition?			
22. Is the reverse alarm signal in good operating condition? (Not required on crawler cranes, power shovels and draglines.)			
23. Can lubricating points needing service during equipment operations be safely accessed?			
24. Tire and wheel inspection to include but not limited to: a. Objects wedged between duals or imbedded in tires. b. Mismatched duals (different sizes). c. Cuts, tears, breaks or abnormal wear. d. Damaged, burned, welded or poor fitting rims or rim flanges. e. Gauge tires for manufacturer recommended tire pressure.			
25. Is the machine equipped with at least one 10 ABC fire extinguisher?			
26. Are all required pressure gauges, ammeters, etc., operable?			
27. Is there a boom length indicator on telescoping boom hydraulic cranes?			
28. Are all outriggers in good condition, operable and level when in place?			
29. If the equipment is used on highways, is it equipped with all required lights, markings, etc.?			
30. Are Mechanical Safety records kept available as a part of the official project file?			
31. Is the unit equipped with an operable air pressure gauge?			
32. Are drain valves accessible on air tanks?			
33. Is a required First Aid kit available and accessible on site? (16 unit minimal - fully stocked)			
34. Data and results of performance test required by EM 385-1-1: <div style="display: flex; justify-content: space-between;"> <div>DATE _____</div> <div>WEIGHT OF PERFORMANCE TEST LOAD _____ TONS</div> <div>MAXIMUM ANTICIPATED LOAD _____ TONS</div> </div> <div style="display: flex; justify-content: space-between;"> <div>SAFE WORKING LOAD _____ TONS</div> <div>LENGTH OF BOOM _____ FEET</div> <div>MAXIMUM RADIUS AT WHICH TEST PERFORMED _____ FEET</div> </div>			
35. Remarks.			
SECTION 3 RECEIPT OF ACKNOWLEDGMENT			
<div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div>Receipt Acknowledged by: (Signature)</div> <div>(Title)</div> <div>(Date)</div> </div>			

DAILY PRE-OPERATIONAL CHECKLIST FOR CRANES
U.S. Army Engineer, Huntington District

INSTRUCTIONS

SECTION 1 - GENERAL INFORMATION:

- Date - Enter month, day, and year of Safety Inspection.*
- Owner/User - Enter designated ownership of equipment (Corps, Corps leased or Contractor by name).*
- Contract Number - Contractors enter the respective contract number.*
- Type of Equipment - Enter Ford 515 Backhoe, JD 450 Bulldozer, etc.*
- Number - Enter equipment number Contractor has issued on large scale operations.*
- Inspected By - Enter signature and title of Corps or Contractor inspector (Corps inspector may be a maintenance leader, maintenance mechanic or operator and a Contractor inspector may be a mechanic, operator or service person).*
- Reviewed By - Enter signature and title of Corps or Contractor reviewer (Corps reviewer may be a maintenance leader, maintenance mechanic, manager or supervisor and a Contractor reviewer may be the mechanic, shift leader, foreman or superintendent). Before a signature and title of Corps or Contractor reviewer is entered the checklist must be reviewed and the equipment spot checked unannounced to ensure inspections are performed.*

SECTION 2 - DAILY PRE-OPERATIONAL CHECKLIST: Check Yes, No or Not Applicable if question or statement does not apply.

SECTION 3 - RECEIPT OF ACKNOWLEDGMENT: Enter signature, title and date signed by personnel acknowledging receipt of the checklist. If Corps personnel was the inspector and reviewer a Corps manager, supervisor or responsible employee will sign the receipt of acknowledgment. If a Contractor personnel was the inspector and reviewer the checklist becomes a part of the official project file and a copy is furnished to the Contracting Officer Representative (COR), the COR will then sign the receipt of acknowledgment. The COR may request a copy of the checklist at any time. The COR or a representative may perform an unannounced spot check inspection to ensure compliance of safety inspection requirements. To determine if inspector and reviewer are Corps or Contractor personnel see SECTION 1, item f. and g.

SECTION 1 GENERAL INFORMATION			
a. Date	b. Owner/User	c. Contract Number	
d. Type of Equipment	e. Number		
f. Inspected By	(Signature) (Title)	Reviewed By	(Signature) (Title)

SECTION 2 DAILY PRE-OPERATIONAL CHECKLIST			
NOTE: Reference U.S. Army Corps of Engineers Safety and Health Requirements Manual (EM 385-1-1, April 1981, as revised). (Equipment must be in full compliance with checklist and contract requirements.)	Yes	No	Not Appl
1. Is the operator's manual in the cab?			
2. Are required load charts posted in view of the operator?			
3. Is a visual list of standard hand signals posted in view of the operator?			
4. Is a notice or sign of minimum required clearance for overhead powerlines posted in view of the operator?			
5. Is there evidence of physical damage to the boom, mountings or pins.			
6. Is the unit equipped with boom stops and are they in good condition?			
7. Are wire ropes and hoisting lines free of broken strands or excessive wear?			
8. Does the hoisting drum(s) have at least two full wraps of wire rope or line on the drum at all operating positions for the lift being made?			
9. Are sheaves, sheave pins, hooks, safety slips and blocks free from damage or excessive wear?			
10. Is the crawler undercarriage and tracks in good condition?			
11. Are jibs properly mounted and provided positive stops?			
12. Are all telescoping boom sections in good condition, with no signs of damage?			
13. Are outriggers operable and have a positive lock when extended?			
14. Is the boom length indicator installed on telescoping boom crane and visible to the operator?			
15. Do lines, line terminations and clamps have excessive wear, broken strands, or damage and proper installation?			

Requirement - Crane is to be situated so that there are no unguarded pinch points when the cab is rotated and all stationary lifts made from wheel mounted cranes are required to be made with outriggers fully extended and locked in place.	Yes	No	Not Appl
16. Do the required instruments, gauges and ammeters properly operate?			
17. Are all oil levels appropriate, i.e., engine, hydraulic and gears?			
18. Is coolant level according to manufacturer recommendations?			
19. Is the cab glass free of cracks, distortion and properly mounted?			
20. Are tires and wheels in good condition and evenly matched in size, including checking of recommended tire pressure?			
21. Does the unit have an operable reverse signal alarm?			
22. Is the unit equipped with an operable anti-two block warning or prevention? (Ref. EM 385-1-1, Sec. 18.D.10 for exemptions and Sec. 18.D.11 for personnel hoisting.)			
23. Are all electrical controls operable?			
24. Are warning signs posted at or near the counter-weight?			
25. Has the crane been load tested within the past 12 months?			
26. Does the load drum positive holding device operate properly?			
27. Are all belts, pulleys, shafts and gears guarded to prevent hazardous contact by personnel?			
28. Is at least a 10 ABC fire extinguisher multi-purpose with the crane?			
29. Is a 16-unit (minimum) first aid kit fully stocked with the crane or readily available?			
30. Do all required lights for highway use and night operations operate properly?			
31. Remarks:			
<h1>SAMPLE</h1>			
SECTION 3 RECEIPT OF ACKNOWLEDGMENT			
<div style="display: flex; justify-content: space-between; margin-top: 100px;"> <div>Receipt Acknowledged by: (Signature)</div> <div>(Title)</div> <div>(Date)</div> </div>			

CRANE LOAD RATING CHART

BOOM
LENGTH

RADIUS (Feet)

SAFE LOAD (Tons)
WITH OUTRIGGER | WITHOUT OUTRIGGER

SAMPLE

THIS CRANE SHALL NOT BE OPERATED WITH
LOADS IN EXCESS OF THOSE LISTED ABOVE.

DATE: _____

SIGNATURE: _____

*(Government Representative Who
Observed Test)*

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APPENDIX I Public Safety

1. Purpose. This appendix provides for a coordinated water safety program for the purpose of preventing public drownings.

2. Applicability. This appendix applies to all District elements involved with public water recreation activities.

3. References. EM 385-1-1 (Safety and Health Requirements Manual)
ER 1130-2-435 (Project Operations Preparation of Project Master Plans)

4. Policy. The District has a moral responsibility for the safety of the visiting public who use District facilities for water recreation activities. In order to meet this responsibility District facilities must be planned, designed, constructed, operated and maintained in a manner which will best provide for the safety of the water recreationist.

5. Responsibilities. Any successful water safety program must involve a coordinated effort with input from all concerned District elements. Since Operations and Readiness Division is the basic element responsible for District waters, they must have the primary responsibility for implementation of water safety programs. Supporting elements include Safety & Occupational Health, Planning, Engineering, Office of Counsel, Public Affairs, Visual Information Unit and Real Estate. Responsibilities of the elements are outlined below:

a. Operations and Readiness Division.

(1) Create an attitude that leaves no doubt about management's support of water safety activities by assuring that all projects get involved in public safety.

(2) Develop a project water safety presentation at those projects where the Corps is directly responsible for lake management. These presentations should be given at the local schools and civic organizations, and as campground programs.

(3) Display water safety posters and bulletins, have water safety articles published in local newspapers, solicit local television and radio stations for airing spot water safety announcements, and sponsor boating and swimming safety activities at the project.

(4) Provide instruction and training for Project Managers and Rangers in water safety program management.

(5) Develop safe swimming/wading areas at completed projects.

(6) Encourage marina operators to promote public safety and support the District's program.

(7) Solicit support from other concerned agencies in assisting with swimming and boating safety programs. Such agencies are the Red Cross, Coast Guard, rescue squads, local law enforcement, etc.

(8) Provide assistance in organizing local Water Safety Councils. Influential citizens should be encouraged to organize local Water Safety Councils. Local Water Safety Councils can supplement the District's effort toward preventing water related accidents.

(9) Improve favorite swimming and wading sites and eliminate any hazardous conditions at these sites. Hazards which cannot be corrected should be identified by the posting of appropriate signs.

(10) Develop a measurement system to determine the types and amounts of water safety activities being conducted by the field projects. Keep all projects informed of each others' activities.

(11) Sponsor boating safety programs such as those sponsored by Coast Guard auxiliaries, and swimming safety and rescue programs such as those offered by the American Red Cross.

(12) Perform lake patrols throughout the recreation season. The patrols should place emphasis on safe boating and encourage swimmers to use the safe swimming areas.

b. Safety and Occupational Health Office. Assist District elements in organizing, directing and measuring the effectiveness of the water safety program.

(1) Keep the District elements abreast of the latest developments in public safety.

(2) Assist in the organization of local Water Safety Councils.

(3) Monitor implementation of water safety programs.

(4) Assist in performance of compliance inspections when requested.

(5) Perform safety surveys of public use areas.

(6) Review plans and specifications for development of public use areas for compliance with safety standards.

(7) Assist with the development, procurement and distribution of water safety program promotional material.

(8) Maintain records of public drownings and injuries.

c. Planning Division. Plan and develop recreation facilities in such a manner as to reduce the drowning potential of the user. Some items to be considered are:

(1) Provide for swimming beaches.

(2) Assure that recreation sites are developed in areas with safe shorelines, i.e., the shoreline does not have dangerous submerged dropoffs, boulders, strong undercurrents, etc.

(3) Plan for boat launch facilities with safe boarding access and vehicular access which would eliminate the public from accidentally driving head-on into the water.

(4) Plan for safe shoreline vehicular access which prevents accidental entry into the water.

d. Engineering Division. Design recreational facilities to reduce the drowning potential.

(1) Provide safe shorelines in the public use areas where swimming and wading are likely to occur by eliminating submerged physical hazards.

(2) Design swimming beaches as required.

(3) Review marina concessionaire development plans and design specifications to assure compliance with current design criteria.

(4) Design boat launch facilities to provide safe boarding access.

(5) Assure launch ramps are laid out in a manner which reduces the potential of visitors from accidentally driving into the water.

(6) Provide safe vehicular access along shoreline roads to prevent accidental entry into the water.

e. Office of Counsel. Provide legal research for determining liability due to drownings and other injuries. Review wording of signs and other written instructions and/or materials for adequacy. Review marina concession contracts to assure that safety provisions are included and are enforceable.

f. Public Affairs Office. Develop radio and television safety spot announcements for local projects. Develop articles on water safety for local newspapers. Develop water safety related handouts to be given to the public.

g. Visual Information Unit. Assist with art work in producing signs, posters, and handouts. Help with educational displays at marinas, camping areas, and other public use areas. Assist in preparation of training aids for formalized training/educational programs.

h. Real Estate. Prepare marina concession contracts in a manner which will require the concessionaire to abide by current safety standards. Develop contracts which will allow for enforcement of safety standards with methods less severe than the threat of doing away with the contract. Assure that implementation of safety provisions is checked during compliance inspections. Work with Resource Managers in encouraging concessionaires to be more concerned about the safety of their clientele.

APPENDIX J Protective Clothing and Equipment

1. Purpose. This appendix prescribes policy for providing protective clothing and equipment to District team members.

2. References. AR 385-32 (Protective Clothing and Equipment)
EM 385-1-1 (Safety & Health Requirements Manual)
ER 385-1-40 (Occupational Health Program)
CEORHR 1180-2-1 (Acquisition Management Instructions)

3. Policy. It is the policy of the Chief of Engineers to provide and require the use of protective clothing and equipment as a means of preventing or minimizing injuries to team members. Protective clothing and equipment are essential to all operations which are inherently hazardous or which are made hazardous by existing conditions such as temperature, footing, illumination and visibility, noise, ventilation, flying particles, atmospheric contaminants, and skin contaminants.

4. Responsibilities.

a. Management responsibilities are to assure that:

(1) Funds are available for procurement of needed protective clothing and equipment.

(2) The protective clothing and equipment program is a vital and important part of the element's total safety and occupational health program.

(3) Protective clothing and equipment is not substituted for the application of engineering or administrative controls which would eliminate the hazards.

b. The team leader has the following responsibilities:

(1) Decide where such equipment is needed.

(2) Decide what type of equipment is suitable to accomplish the work.

(3) Educate team members to use the required equipment.

(4) Enforce the use of equipment where needed.

(5) Inspect equipment regularly for defects.

(6) Assure the equipment is properly cleaned, stored, and maintained.

(NOTE: Pages J-4 through J-6 provide lists of authorized equipment. Pages J-7 through J-11 provide a Team Leader's Selection Guide For Personal Protective Equipment.)

c. Each team member has the responsibility to:

(1) Wear the equipment when and where it is required.

(2) Properly maintain personal protective equipment such as shoes, prescription glasses, etc.

d. The Safety & Occupational Health Office is responsible for:

(1) Monitoring the protective clothing and equipment program.

(2) Assisting team leaders in analyzing jobs and tasks for determining the needs of protective clothing and equipment.

(3) Giving final approval for authorization of protective clothing and equipment not listed on pp. J-4 through J-6.

5. Guidelines for Administering the Protective Footwear Program.

a. All District team members whose occupations or duties require them to work in a foot-hazard environment, and all District Office team members who frequent field installations and are subjected to a foot-hazard environment, are required to use ANSI Z41.1 approved protective footwear and are eligible to receive it at Government expense. The footwear will be issued as personal property in accordance with AR 385-32.

b. Those team members who regularly work in foot-hazard areas or a foot-hazardous environment, and are required to wear safety shoes daily, are authorized to have two pairs of serviceable safety shoes in their possession. This would include permanent field team

members; temporary field team members with an appointment in excess of 180 days; and certain District Office team members of CEORH-CD, CEORH-LM, CEORH-IM-CM, CEORH-IM-IC, CEORH-ED, CEORH-OR, CEORH-PD-R, CEORH-RE and CEORH-SO. Team members with less than 180 days appointment are authorized one pair of serviceable safety shoes.

c. Those District Office team members who frequent field installation and are subjected to a foot-hazardous environment are authorized one pair of serviceable safety shoes.

d. Protective footwear should be repaired when necessary and replaced when justified, as determined by the team leader. There is no time limitation on repair or replacement. Repair or replacement, as determined by visual inspection of the team leader, will be based upon wear and deterioration of the shoes. Team leaders must certify (in writing) that a visual inspection of the protective footwear to be repaired or replaced has been made and it is determined that repair or replacement is authorized. The team leader must then sign immediately below this statement. The District will pay up to \$100.00 per pair of safety shoes/boots. Any expense greater than \$100.00 must be paid by the team member.

e. A jacket file will be maintained by team leaders for protective footwear issued to team members under their leadership. The file will consist of a hand receipt for the item issued on a ENG Form 4866 (Interim Hand Receipt). The team leader must have a signature acknowledging receipt of footwear for each team member furnished protective footwear. Property loan receipts will be transferred to the appropriate location when the team member is transferred from one location to another.

f. Team leaders are responsible for enforcement of this directive and will ensure that team members furnished protective footwear under this program wear them at all times while on duty in a foot-hazard area or environment. Team members who are furnished safety shoes and report to work in a foot-hazard area or environment without them may be assigned to duties not requiring such shoes, or may be directed to take annual leave or be placed in a non-pay status in the absence of any annual leave to their credit. Persistent or deliberate violation of this requirement may serve as a basis for appropriate disciplinary action.

6. Guidelines for Administering the Prescription Safety Spectacle Program.

a. All District team members who, in the performance of assigned duties, are subjected to eye hazards from physical agents such as flying chips, particles or similar objects may be eligible to receive ANSI Z-87.1 prescription or nonprescription safety spectacles at Government expense.

b. The following requirements are guidelines for determining a team member's eligibility for prescription safety eyewear:

(1) The individual will remain as a team member for a responsible amount of time (60 days) after requisitioning.

(2) The individual normally wears either prescription glasses or contact lenses.

(3) The team member is willing to pay for both the prescription and the fitting of the safety spectacles.

(4) The occupations listed in paragraph 6.c. below are authorized safety spectacles.

(5) Other team members who believe that because of job duties they should be issued safety glasses should obtain written approval from the appropriate staff element chief or his designated representative prior to getting a prescription to preclude unnecessary personal expense. The team member will then submit the written approval with the requisition for the spectacles.

c. The following occupations are eligible for protective safety spectacles:

Carpenters
Construction inspectors
Deckhands
Electricians
Equipment repairers
Geologists
Ironworkers
Laborers
Lockmen
Maintenance men
Machinists

Field Managers
Painters
Rangers
Sandblasters
Surveyors
Welders
Chief, CEORH-SO
Safety & Occupational Health Specialist
Safety & Occupational Health Technician
Industrial Hygienist
District Office team members who regularly
visit field sites where eye hazards are present.

d. Procurement of prescription safety spectacles will be in accordance with CEORHR 1180-2-1, paragraph 8.9-1. The appropriate staff element chief or his designated representative must approve, by signature or initials, each requisition. Those team members who in the course of their duties operate boats or work on or adjacent to the water and whose duties do not require critical acuity or fast reaction to visual stimuli, particularly in operations where the wearer passes from outdoors to indoors in the course of the job may be authorized photochromic lenses. The following two types of photochromic lenses are approved for purchase and use as safety glasses; photobrown extra and transition lenses. These two types of lenses are the only photochromic lenses which provide the EM 385-1-1 required 96% reduction in ultraviolet light transmission. Where photochromic glasses are appropriate based on job duties, they will be an option in lieu of both clear lense glasses and ultraviolet light transmission. Those employees whose jobs justify both tinted glasses and clear glasses shall be authorized both. The frequency of purchase shall be based on the physician's evaluation of the employee's changed eyesight. The cost of basic safety glasses with side shields as described above, shall be borne by the Government. Optional features desired by the employee shall be at their own cost.

7. Guidelines for Administering the Hard Hat Program.

a. All team members working in areas where there is a danger of head injury from impact, falling or flying objects, or from electrical shock and burns shall be furnished and required to wear approved type hard hats. District Office team members who make frequent trips to field installations shall be furnished hard hats and be required to wear them where head hazards exist. Each

installation shall have extra hard hats for use by visitors. These hats will be maintained in a clean, serviceable condition. Headbands will be changed as necessary.

b. Hard hat areas shall be marked by signs at all entry points. The hard hat areas shall be general areas such as project, quarry, or building rather than specific portions of a building or project. The installation team leader will be responsible for marking the hard hat areas and enforcing the use of hard hats in these areas. Paragraph 07.C.05 of EM 385-1-1 identifies the team members required to wear hard hats while on the work site.

c. Two classes of hard hats are acceptable for use on Corps of Engineers projects. These are Class A and Class B. Class A hard hats are for general service. They provide protection against impact and flying particles and have a limited dielectric strength. Class B hard hats are for utility service. This class provides protection against impact and flying particles and has a high dielectric strength. Each hat or cap shall be identified on the inside of the shell with the name of the manufacturer and class of protection. This identification sticker indicates a federal specification number such as GGG-H-1429 (Class A) or GGG-H-177a (Class B), and is provided by the hat manufacturer.

d. Hats will be marked with a one-inch band of red reflective tape extending around the base of the crown, leaving a five-inch break at the front. A red Corps of Engineers insignia, one inch high and one and one-half inches wide, will be centered horizontally at the front of each hat, the base of the insignia being three-fourths inch above the base of the hat crown. The reflective tape and insignia may be specified on requisitions. A UBG, under-bill green may also be specified on the requisition. A UBG is a dark green, covering for the underside of the bill of the cap which reduces the glare from the bill. Permanent team members will have their name placed above the insignia in white, three-sixteenth inch capital letters embossed on black tape, and their organizational title or element placed below the insignia in the same manner. Military rank of active duty team members may precede the name. Drilling or painting the hat or cap is prohibited (ref. ER 385-1-6 (Standard Color and Markings for Hard Hats)). Hard hat safety award stickers shall be placed above the red reflective tape, over the right ear area.

The above listed items are the only authorized items to be placed on hard hats.

Authorized Protective Clothing and Equipment for Employees

CONSTRUCTION DIVISION FIELD OFFICES

Aprons - special protective (laboratory use)
Boots - rubber w/safety toe
 special protective (arctics or galoshes)
 leather w/safety toe
Ear Protection - plugs and/or muffs
Glasses - safety (prescription, plano)
Gloves - cotton, leather, rubber

Goggles - welding, grinding
Hats - safety (all types) including liners
Respirators - all types with filters
Suits - rain (jacket, trousers, hood)
Vests - reflective
 work (life)
Waders

OPERATIONS AND READINESS DIVISION

Navigation Branch

Aprons - welder's
Back Belts
Band - sweat, head
Belts - safety (all types)
Boots - rubber w/safety toe
 special protective (arctics or galoshes)
 leather w/safety toe
Chaps - chainsaw operators
Diver's equipment and clothing
Ear Protection - plugs and/or muffs
Glasses - safety (prescription, plano)
Gloves - special protective (all types)
Goggles - special protective (all types)

Hats - safety (all types)
 including liners
Hoods - Sandblasters
Jacket - special protective (welder)
Knee Pads
Lines - safety or life
Respirators - dust, fume, vapor
 (including filters)
Shields - welding and face
Sleeves - welders
Spats - welders
Suits - rain (jacket, trousers, hood)
Vests - work (life)

Maintenance Engineering Branch

Aprons - cook's, welder's
Back Belts
Bands - sweat, head
Belts - safety (all types)
Boots - rubber w/safety toe
 special protective (arctics or galoshes)
 leather w/safety toe
Caps - cook's
Chaps - chainsaw operator's
Climbers - pole, tree
Ear Protection - plugs and/or muffs
Glasses - safety (prescription, plano)
Gloves - special protective (all types)
Goggles - special protective (all types)
Handshields - welder's

Hats - safety, including liners
Helmets - air-supplied, sandblaster,
 spray painter, welder
Hoods - sandblaster's
Jacket - cook's, welder's
Knee Pads
Lines - safety or life
Pads - knee, shoulder
Respirators - dust, fume, vapor
 (including filters)
Shields - Welding & face
Sleeves - welder's
Spats - welder's
Suits - rain (jacket, trousers, hood)
Vest - work (life), welder's

Navigation Branch, Waterways Section

Back Belts	Gloves - special protective (all types)
Boots - rubber w/safety toe special protective (arctics or galoshes) leather w/safety toe	Goggles - special protective (all types)
Ear Protection - plugs and/or muffs	Hats - safety (all types) including liners
Glasses - safety (prescription, plano)	Suits - rain (jacket, trousers, hood)
	Vests - work (life)

Natural Resource Management Branch

Aprons - special protective (acid proof)	Goggles - special protective (all types)
Back Belts	Hats - safety (all types) including liners
Band - sweat, head	Headlamps - fire fighters
Boots - rubber w/safety toe special protective (arctics or galoshes) leather w/safety toe	Helmets - welder's
Canteen - belt mount, fire fighters	Jacket - welder's
Chaps - chainsaw operator's	Knee Pads
Ear Protection - plugs and/or muffs	Lines - safety or life
Fire Tetardant Clothing - fire fighters	Respirators - dust, fume, vapor (including filters)
First Aid Kit - belt mount, fire fighter crew leader	Shields - welding, face
Glasses - safety (prescription, plano)	Suits - rain (jacket, trousers, hood)
Gloves - special protective (all types)	Waders
	Vests - work (life)

ENGINEERING DIVISION

Geotechnical Branch, Exploration Section

Aprons - special protective (acid)	Gloves - special protective (all types)
Back Belts	Goggles - special protective (all types)
Belts - safety	Hats - safety (including liners)
Boots - rubber w/safety toe special protective (arctics or galoshes) leather w/safety toe	Respirators - dust (including filters)
Ear Protection - plugs and/or muffs	Suits - rain (jacket, trousers, hood)
Glasses - safety (prescription, plano)	Vests - work (life)

Hydrology and Hydraulics Branch

Aprons - special protective (acid)	Gloves - special protective (all types)
Back Belts	Goggles - special protective (all types)
Boots - rubber w/safety toe special protective (arctics or galoshes) leather w/safety toe	Hats - safety
Glasses - safety (prescription, plano)	Suits - rain (jacket, trousers, hood)
	Vests - work (life)
	Waders

Survey Branch

Back Belts	Hard hats - safety
Boots - rubber w/safety toe	(including liners)
special protective (arctics or galoshes)	Jackets - disposable
leather w/safety toe	Suits - special protective, rain
Glasses - safety (prescription, plano)	(jacket, trousers, hood)
Gloves - special protective (all types)	Vests - work (life)
Goggles - special protective (all types) reflective	Waders

LOGISTICS MANAGEMENT OFFICE

Selected LM Personnel

Back Belts	Gloves - special protective
Boots - leather w/safety toe	(cotton, leather, rubber)
Ear Protection - plugs and/or muffs	Goggles - special protective (grinding)
Glasses - safety (prescription, plano)	Hats - safety (including liners)

INFORMATION MANAGEMENT OFFICE

Information Planning & Implementation Branch

Ear Protection - plugs and/or muffs

REAL ESTATE DIVISION

Boots - special protective (arctics or galoshes) leather w/safety toe	Glasses - prescription, plano
Shoes - safety toe	Suit - rain (jacket, trousers, hood)

SAFETY AND OCCUPATIONAL HEALTH OFFICE

Boots - special protective (arctics or galoshes) leather w/safety toe	Respirators
Ear Protection - plugs and/or muffs	(all types as needed)
Glasses - safety (prescription, plano)	Shoes - safety toe
Hats - safety (including liners)	Suit - rain (jacket, trousers, hood)
	Vests - work (life)

ENVIRONMENTAL PLANNING BRANCH

Boots - special protective (arctics or galoshes) leather w/safety toe	Suit - rain (jacket, trousers, hood)
	Eye Protection

TEAM LEADER'S SELECTION GUIDE FOR PERSONAL PROTECTIVE EQUIPMENT

(Unless Otherwise Noted, Specific Requirements Are Noted From EM 385-1-1)

Page 1 of 5

TYPE	SPECIFIC REQUIREMENTS	OTHER CONSIDERATIONS
Eye/Face Protection	Must meet the requirements of ANSI Z87.1. Required shades for (welding) filter lenses and glasses as listed in Appendix A, EM 385-1-1.	<p>1. Consideration should be given to the type of work being performed. Appendix U, EM 385-1-1 provides a selection guide for eye and face protectors. Paragraph 6.d. of this appendix also gives specific guidance.</p> <p>2. Recommend a selection of protectors be made available to allow for proper fit, personal preference, and variety of exposures.</p>
Fall Protection	<p>Safety belts, harnesses, lanyards, life lines, and drop lines must meet the requirements of ANSI A10.14 for Safety Belts, Harnesses, Lanyards, Lifelines and Drop Lines for Construction and Industrial Use and Section 07.A. and 07.I. of EM 385-1-1. Safety belts must be free from additional metal hooks and tool loops other than those permitted in the ANSI standard.</p> <p>Lifelines and drop lines used on rock-scaling operations or in areas where the line may be subject to cutting or abrasion shall be a minimum 7/8-inch manila rope with wire core. For all other lifeline applications, a minimum of 3/4-inch manila or equivalent, with a minimum breaking strength of 5400 pounds (2454 Kg) per person shall be used.</p> <p>A safety belt or harness shall have two lanyards when necessary to ensure that a person is tied off with at least one lanyard at all times, or where the lanyard is the primary support for operations such as rockscaling and high wall concrete finishing, etc.</p> <p>Safety belt lanyard shall be a minimum of 1/2-inch nylon, or equivalent, with a maximum length to prevent a fall of no greater than 6 feet (1.83 m). The rope shall have a nominal breaking strength of 5400 pounds (2454 Kg) per person.</p>	<p>1. In most potential fall situations, a properly fitted safety harness will distribute the force of a fall over a larger portion of the body than will a safety belt. Thus, in most instances when a harness or belt is required, a harness is the preferred device.</p>

TEAM LEADER'S SELECTION GUIDE FOR PERSONAL PROTECTIVE EQUIPMENT

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TYPE	SPECIFIC REQUIREMENTS	OTHER CONSIDERATIONS
Fall Protection (Continued)	<p>All new safety nets shall meet accepted performance standards of 17,500 foot-pounds (255,325 Newton/metres) minimum impact resistance as determined and certified by the manufacturers and shall bear a label of proof test. Edge ropes shall provide a minimum breaking strength of 5000 pounds (2.3 Kg). Reference Section 07.D. of EM 385-1-1.</p> <p>The maximum mesh size of nets shall be 6 inches by 6 inches (15 cm x 15.2 cm).</p> <p>Nets for overhead protection shall be lined with wire or synthetic netting of not more than 1 inch (2.54 cm) mesh. Wire mesh shall be made of not less than 22-gauge wire and synthetic mesh of not less than Number 18 twine.</p>	
Foot Protection	<p>1. EM 385-1-1 requires protective footwear for all persons engaged in work which requires such protection.</p> <p>2. ORDR 385-1-9 and ORHR 385-2-3 require the use of safety shoes in foot hazardous areas.</p>	<p>1. The Government (ORH) will pay up to \$100.00 per pair of safety shoes/boots. Any expense greater than \$100.00 must be paid by the individual employee.</p> <p>2. Specific guidance on eligibility for protective footwear may be found in paragraph 5 of this appendix.</p> <p>3. Consideration should be given to type of environmental exposure (dry, cold, hot, wet, slick, etc.), use (shopwork as opposed to construction work), and personal preference.</p>
Full Body Covering (Coveralls)	<p>EM 385-1-1 currently has no specific requirements for full body covering.</p> <p>OSHA 1910.1025.g.1.i requires full body covering when a team member is exposed to lead above the PEL (permissible exposure limit).</p> <p>EPA regulations for hazardous waste/spill cleanup also require full body covering for certain exposures.</p>	<p>1. Manufacturer's literature should be closely reviewed to assure the full body covering provides adequate protection against the specific exposure.</p>

TEAM LEADER'S SELECTION GUIDE FOR PERSONAL PROTECTIVE EQUIPMENT

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TYPE	SPECIFIC REQUIREMENTS	OTHER CONSIDERATIONS
Hand Protection	<p>Rubber insulating gloves must meet the requirements of ANSI/ASTM D 120-79a.</p> <p>Persons handling rough, sharp-edged, abrasive materials or where the work subjects the hands to lacerations, punctures, burns or bruises shall use hand protection.</p>	<p>1. Consideration should be given to types of exposure.</p> <p>heat: loop pile or aluminized gloves general shop wear: 19 oz. cotton or loop pile gloves oily work: plastic dipped gloves acids, etc., where finger dexterity is required: fine rubber gloves acid, caustic handling: neoprene gauntlet slippery and oily jobs: neoprene and cork-dipped gloves arc welding: chrome leather welder's glove</p>
Hard Hat	<p>Must meet requirements of ANSI Z89.1, Class A or ANSI Z89.2, Class B. Hard hats worn near electrical lines and equipment shall be ANSI Z89.2, Class B approved. Reference Section 07.C. of EM 385-1-1.</p>	<p>1. Environmental conditions - wind, rain, bright sunlight. Chin straps, collar drip rings, and UBG's (under bill green) are available on some models.</p> <p>2. Some manufacturers will imprint the Corps Castle and red stripe on hard hat.</p> <p>3. Consideration should be given to compatibility with other personal protective equipment such as eye and hearing protection.</p>
Hearing Protection	<p>Must have been tested in accordance with ANSI Z24.22. Reference Section 32 of EM 385-1-1.</p>	<p>1. EPA regulations require that all hearing protective devices or their packaging be posted as to the actual noise reduction they provide. This is listed on the device or its packaging as its "NRR." To assure that adequate protection is being provided, the actual noise exposure should be compared to the NRR.</p> <p>2. For Government team members, protection must be provided for noise exposure over 84 dBA plus a 7 dB safety factor.</p> <p>3. A formula to determine if a device provides adequate protection for a particular noise exposure is as follows:</p>

TEAM LEADER'S SELECTION GUIDE FOR PERSONAL PROTECTIVE EQUIPMENT

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TYPE	SPECIFIC REQUIREMENTS	OTHER CONSIDERATIONS
Hearing Protection (Continued)		<p>$NRR = (\text{Actual Noise Exposure} + 7 \text{ dB safety factor}) - (84 \text{ dB})$</p> <p>Example: $NRR = (88 \text{ dB from drill} + 7 \text{ dB}) - (84 \text{ dB})$ $NRR = 95 - 84$ $NRR \geq 11 \text{ dB}$</p> <p>4. Recommend a selection of protectors (all of which provide adequate protection for the exposure) be made available to allow for proper fit and comfort, personal preference, and compatibility with hard hat, eye protection, etc.</p>
Personal Flotation Devices (PFD's)	<p>Reference Section 07.E. of EM 385-1-1.</p> <p>PFD's must be U.S. Coast Guard approved Type III, Type V, or better and International Orange in color.</p> <p>PFD's must be equipped with retro-reflective tape meeting 46 CFR 25.25-15.</p> <p>PFDs provided on vessels used on great lakes, coastwise, or ocean service shall be equipped with lights in accordance with 46 CFR 25.25-13. Work vests are exempt from the lighting requirement if an additional approved PFD is available for the team member on board.</p>	<p>1. The lower the Type number, the greater degree of protection, i.e., Type I provides better protection than Type III, etc.</p> <p>2. A variety of sizes should be available or the PFD should be size adjustable to a great degree.</p>
Respiratory Protection	<p>Reference Section 07.B. of EM 385-1-1.</p> <p>Protective device must be approved by NIOSH or MSHA.</p> <p>Air supplied respirators are required for entry into atmospheres containing less than 19.5% oxygen.</p> <p>Hose masks or air line respirators shall be worn by persons doing abrasive blasting or spraying with harmful substances.</p>	<p>1. Before requiring an team member to wear a respirator, he must be medically evaluated to determine if he is physically capable.</p> <p>2. A good seal between the face and mask is essential. Respirators are not effective when conditions such as facial hair, temple pieces on glasses, absence of one or both dentures, etc., prevent a good face/mask seal.</p>

TEAM LEADER'S SELECTION GUIDE FOR PERSONAL PROTECTIVE EQUIPMENT

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TYPE	SPECIFIC REQUIREMENTS	OTHER CONSIDERATIONS
Respiratory Protection (Continued)	<p>Canister masks shall be permitted only where the toxic content of the air is known to be of type and concentration which the mask will effectively remove. Where the type and concentration of the toxic content of the atmosphere is suspected but unknown, an air-supplied respirator is required.</p> <p>Air supplied to respirators shall be free of harmful dusts, fumes, vapors, gases, and obnoxious odors. Purity of the air shall meet USP or Compressed Gas Assoc. Spec. G7.1, grade D.</p>	<p>3. Due to anatomical variance between team members, a variety of sizes and styles of respirators should be available so a good fit may be assured.</p> <p>4. Appendix N of EM 385-1-1 provides a guide to respirator selection.</p>
Rubber Protective Equipment	<p>Reference Section 07.A. of EM 385-1-1.</p> <p>Rubber protective equipment must meet the requirements of ANSI/ASTM D series as follows:</p> <p>Rubber Insulating Gloves D120-79a Rubber Matting for use around electric apparatus D178-77 Rubber Insulating Blankets D1048-77 Rubber Insulating Hoods D1049-79a Rubber Insulating Line Hose D1050-80 Rubber Insulating Sleeves D1051-79a</p>	<p>1. In most instances when rubber protective gloves are used around electrical equipment, they should fit well and be used with a leather glove over them.</p> <p>2. In actual use, extreme care should be taken to maintain and assure the integrity of rubber insulating equipment when it is utilized around electrical equipment.</p>

APPENDIX K Safety Awards Program

1. Purpose. This appendix establishes criteria for recognition of District team members' performance in accident prevention.

2. Awards.

a. Individual Safety Awards. CEORH Form 2839 (Certificate of Achievement) is authorized for Huntington District team members as follows:

(1) District team members who make an outstanding contribution to the District Safety and Occupational Health Program are eligible to receive an Individual Safety Award except in any of the following instances:

(a) Team members who have sustained a recordable accident during the award period, and

(b) Team members who have been on light duty as a result of a work related injury or illness during the award period or

(c) Any team member who contributed to accidental injury of a contractor or fellow team member or to a property damage accident.

Exceptions to any of the above listed items must be strongly justified and approved by both the element chief and Chief, CEORH-SO.

The period to be covered in making the determination will be the calendar year, 1 January through 31 December. The award will consist of a certificate presented to the team member by the District Commander or his representative and a cash award until the District gains regulatory authority to purchase award items. This award will not be used to recognize entire work groups. The intent of this award is to recognize outstanding individuals in work groups. Project Safety Awards are intended to recognize work groups.

(2) Team leaders are responsible for nominating team members for this award. Criteria to be used by team leaders to determine an individual's outstanding achievement in the prevention of accidents must consist of:

(a) Team member's actions in eliminating unsafe conditions and/or unsafe acts.

(b) Team member's acceptance of safety and occupational health responsibility as exhibited by their proper use of personal protective equipment, safe use and operation of equipment, tools, etc.

(c) Team member's safe performance of duties.

(d) Team member's active participation in safety meetings.

(e) Team member's adopted safety suggestions (significant but not required).

(3) The authorized level of cash award for Individual Safety Award recipients is \$250.00. Team leaders are responsible for processing a DA Form 1256, Special Act or Service Award Nomination, and forward it through supervisory channels to the Safety and Occupational Health Office along with the Individual Safety Award nomination. The criteria for justification of the Special Act or Service Award shall be the same as that listed in paragraph 2.a.(2) above.

b. Safe Driving Awards. Award is authorized for Huntington District team members as follows:

(1) Every District team member who operates a motor vehicle 7,500 miles or more in a calendar year (1 January through 31 December) without sustaining a recordable accident is eligible for the Safe Driving Award. The award will consist of a certificate presented by the District Commander or his Representative and a cash award until the District gains regulatory authority to purchase award items.

(2) Team leaders are responsible for nominating team members for this award. Criteria to be used by team leaders to determine an individual's safe driving achievement must consist of:

(a) Driving 7,500 miles or more annually.

(b) Sustaining no recordable motor vehicle accident.

(c) Exercising defensive driving techniques.

(d) Accepting responsibility for safety while operating a government vehicle.

(e) Promoting and encouraging safe driving attitudes to other team members.

(3) The authorized level of cash award for a Safe Driving Award is:

7,500 - 19,999 miles driven - \$150.00
20,000 or more miles driven - \$250.00

Team leaders are responsible for processing DA Form 1256 and forwarding it through supervisory channels to the Safety and Occupational Health Office along with the Safe Driving Award nomination. The criteria for justification of the Special Act or Service Award shall be the same as that listed in paragraph 2.b.(2) above.

c. Project Safety Awards. All projects which do not sustain a recordable government or contractor accident, i.e., Class D, lost time, motor vehicle, or property damage in a fiscal year (1 October through 30 September), are eligible for the Project Safety Award. The award will consist of a distinctive wall plaque presented by the District Commander or his Representative. Those projects which achieve more than one consecutive year accident-free experience are eligible for the Multi-Year Safety Award.

Element team leaders are responsible for nominating projects for the one-year or multi-year awards.

d. Hard Hat Sticker Safety Awards. Every permanent team member who is required to wear a hard hat during the course of their duties and does not sustain a lost-time accident in a calendar year (1 January through 31 December) is eligible for the Hard Hat Sticker Safety Award. The award consists of a vinyl adhesive-backed sticker with the Corps' logo, U.S. Army Corps of Engineers, Huntington District, and number of years without a lost-time accident. The awards are administered and issued by the Safety and Occupational Health Office. The number of years of service will reflect the team member's service with the Corps of Engineers. Service on military duty or with other federal agencies or MACOM's is not counted in the years of service reflected by the Hard Hat Sticker.

3. Nominations. Based on the criteria as outlined in paragraphs 2.a.(2) and 2.b.(2), nominations must be written with due consideration given to the level of responsibility of the individual recommended. Nominations shall be submitted in written form and forwarded through proper channels to the division/element chief. Final selection of individuals to be recognized will be made by the division chief or a designated selecting official in conjunction with the Chief, CEORH-SO. A list of individuals selected will be forwarded to the Safety and Occupational Health Office, annually, for implementation of the recognition.

4. Record of Individual Awards. A record of the Individual Safety Award and Safe Driving Award will be included in the team member's official personnel folder.

APPENDIX L Medical Surveillance Program

1. Purpose. To ensure team member health is maintained, to reduce and prevent occupational related illness so both manpower and economic losses will be minimized, to assure compliance with various health regulations, to assure team members are physically qualified for their jobs, and to assure team members' continued health.

2. References. ER 385-1-40 (Occupational Health Program)
ORDR 385-1-16 (Safety and Occupational Health Program)
AR 40-5
29 CFR 1910
29 CFR 1960
Executive Order 12196

3. General Explanation. The three major components of the program are: 1) environmental surveys; 2) team member examinations; and 3) training. Team members will be included in the medical surveillance program based upon their exposure to various health hazards. These hazards include chemical, physical, and biological agents. Team member exposures will be determined through a combination of job analysis and actual environmental measurements.

4. Applicability. This program is applicable to all CEORH team members.

5. Inclusion Criteria.

a. All full-time permanent, temporary and part-time civilian team members of the Corps are eligible for inclusion in the Medical Surveillance Program (MSP) when their work with chemical, biological or physical agents is of sufficient duration and concentration that physiological damage could occur, or when physical examinations are required by Federal Regulations.

b. When the Permissible Exposure Limits of a substance with which a team member works are expressed as 8-hour, time-weighted averages (refer to ACGIH or 29 CFR 1910, Subpart Z - Toxic and Hazardous Substances) the following criteria will be utilized for including the team member in the MSP. If the exposure exceeds the Permissible Exposure Limits, the team member is enrolled in the MSP. If the concentration of the material is less than the Permissible Exposure Limits but exceeds the Action Level Concentration, the team member must work with the material 120 hours (may be nonconsecutive) in a six-month period to be included in the MSP. Work is defined

as being engaged in the normal activities of the job rather than serving in a purely administrative or consultative role. Thus, if a team member's exposure to a substance is less than the Action Level Concentration, inclusion in the MSP would not be indicated, regardless of the time the team member performs the work, except as indicated below.

c. When the Permissible Exposure Limits (refer to ACGIH or 29 CFR 1910, Subpart Z - Toxic and Hazardous Substances) of a substance have a ceiling designation, a concentration which shall not be exceeded, team members working with the substance will be included in the MSP regardless of the duration of exposure.

d. Medical Surveillance will be provided as required by Federal Regulations (refer to 29 CFR 1910.1001-.1045). Team members working with these regulated compounds will be included in the MSP regardless of exposure levels or duration of exposure.

e. Specific medical examinations will be provided when they have been identified as being required for a job. These requirements may be identified in the Federal Personnel Manual or other pertinent regulations.

f. Medical examinations may be conducted when, in the opinion of the Safety & Occupational Health Office, Personnel Office or other appropriate office, that a medical examination is required to protect the health of the team member.

g. Currently the following District team members are included in the District's Medical Surveillance Program:

- (1) Corps Divers.
- (2) Pesticide Applicators.
- (3) Wildfire Firefighters.
- (4) Water Quality Lab team members.
- (5) Visual Information Unit.
- (6) Logistics (Warehouse) team members.
- (7) Repair Party team members.
- (8) Hazardous Waste Site (SUPERFUND, DERP) team members.
- (9) Crane Operators.
- (10) Team members exposed to Asbestos.
- (11) Team members included in the Hearing Conservation Program.
- (12) Team members who enter Class A or B confined spaces.
- (13) Team members who wear respirators.

APPENDIX M

Hearing Conservation Program

1. Purpose. The purpose of this appendix is to provide guidelines and establish criteria for implementing and administering an effective hearing conservation program.

2. References. AR 40-5 (Preventive Medicine)
ER 385-1-89 (Hearing Conservation Program)
29 CFR 1910.95
EM 385-1-1 (Safety and Occupational Health Program)
ORDR 385-1-16 (Safety and Occupational Health Program)
ORDR 385-1-17 (Hearing Conservation Program)

3. Applicability. This appendix applies to all Huntington District team members. Contractors should refer to EM 385-1-1, Section 32 for hearing conservation standards.

4. Responsibilities.

a. District Commander will ensure compliance with the Hearing Conservation Program.

b. The Safety and Occupational Health Office will assist and advise team leaders in providing the correct types of hearing protectors, assure noise surveys are conducted, maintain copies of noise surveys, and provide assistance in training and developing engineering controls. The District Health Unit will assist team leaders in locating and approval of audiometric testing facilities. The District Health Unit will prepare a list of team members previously given audiograms and the date of their most recent examination. Such lists shall be furnished to the respective staff elements early each fiscal year. Audiometric testing is available to all District team members in the Health Unit.

c. Team leaders will schedule team members for audiograms, enforce use of hearing protectors in noise hazardous areas, post signs in noise hazardous areas, frequently stress the benefits of hearing protectors in safety meetings and to new team members, and notify the Safety and Occupational Health Office when noise levels may be changed due to changes in conditions.

d. Team members are responsible for properly wearing hearing protectors as required, reporting to their team leader areas or equipment/machinery they suspect to

be noise hazardous, and to participate in training and audiometric testing.

5. General. The hearing conservation program is an essential part of our total occupational health program. Its fundamental purpose is to protect team members from the harmful effects of occupational noise. The objective of this program is to prevent or minimize the following:

- a. Damage to hearing.
- b. Nervous tension, discomfort and annoyance, with resulting loss of efficiency.
- c. Interference of hearing, communications, and warning signals.

6. Noise Surveys.

a. The District Safety and Occupational Health Office will conduct and document noise surveys at all team member work locations which are potentially noise hazardous.

b. Noise surveys will be repeated triennially for areas and operations designated as noise hazardous, or sooner if any of the following occur:

- (1) Any change in process or equipment which could create higher noise levels.
- (2) Additional team members may be exposed at or above 85 dBA.
- (3) There is reason to suspect that hearing protectors are not providing attenuation to at least 84 dBA.
- (4) A team member exhibits hearing loss based upon audiometric testing.

c. If any of the conditions listed in 6.b. (1)-(4) occur, the team leader should immediately notify CEORH-SO. The District Safety & Occupational Health Office will conduct a noise survey on the potential noise hazard within 30 days.

d. Records of noise surveys will be maintained by the District Safety and Occupational Health Office, and by each installation surveyed.

7. Noise Control.

a. Noise levels found to be above 84 dBA must be controlled by engineering methods where feasible. Engineering controls may include but are not limited to any one (or combination) of the following: enclosures, isolation, absorption of noise by acoustical materials, equipment modification, or substitution of less noisy equipment.

b. If engineering controls are not feasible, administrative controls such as team member rotation or limited access to the noise hazard should be considered.

c. During the procurement of new equipment, every effort should be made to purchase only equipment producing less than 85 dBA noise output.

8. Hearing Protectors.

a. Hearing protectors will be provided and used anytime team members are exposed to 85 dBA or greater levels of noise.

b. Hearing protectors will be evaluated for their adequacy in providing noise attenuation through the use of the following formula:

$$\text{dBA} - (\text{NRR} - 7) = \text{attenuated noise level to the ear}$$

(NRR-EPA noise reduction rating as tested by the manufacturer. This will be found on the hearing protection package.)

Example: A team member is exposed to 100 dBA noise and his ear plugs have a NRR of 15 dBA, what is the noise level received by his ears?

$$100 - (15 - 7) = 92 \text{ dBA}$$

Since the hearing protectors must attenuate down to at least 84 dBA, the protector in the example is inadequate and another type should be chosen.

c. Only those hearing protectors which have been tested in accordance with ANSI Z24.22 are acceptable. Some types, such as individually molded plugs, require fitting by a health professional.

d. Where noise levels are 108 dBA or above, both plugs and muffs must be worn.

e. Lists of different types of hearing protectors are available from the Safety & Occupational Health Office.

9. Audiograms.

a. A baseline audiogram will be given to all team members, permanent and temporary, who are exposed to noise at or above 85 dBA for 15 minutes or more in a 24-hour period. These will be repeated annually.

b. Yearly evaluations will be made by comparing the most recent audiogram with the baseline audiogram. When a significant threshold shift occurs (a 50 dBA average loss at 2000, 3000, & 4000 Hertz), appropriate actions, including team member notification, retesting or evaluation by a specialist, will be taken.

c. Audiograms will be given by a certified technician or other professional as specified in 29 CFR 1910.95.

d. Audiograms will be maintained by the Health Unit as part of the team members's permanent medical record.

10. Training.

a. An annual training program will be identified for all team members exposed to hazardous noise levels.

b. The team member will be provided with the following information at a minimum:

Effects of noise on hearing, the purpose of hearing protectors, advantages, disadvantages and attenuation of the various types and the purpose of audiometric testing and an explanation of the test procedures.

c. Team members must be trained regarding the use and care of hearing protectors. This is of vital importance since studies have shown that improperly worn ear plugs may only provide 50 percent of the manufacturers stated NRR.

d. A copy of the OSHA hearing conservation standard (29 CFR 1910.95) shall be made available to affected team members.

11. Signs. Warning signs shall be posted at entrances to or on the periphery of all hazardous noise areas.

APPENDIX N Hazard Communication Program

1. Purpose. The purpose of this appendix is to provide guidelines and establish criteria for implementing and administering an effective hazard communication program.

2. References. ER 385-1-40 (Occupational Health Program)
EM 385-1-1 (Safety and Occupational Health Requirements Manual)
29 CFR 1910.1200
49 CFR 171-179
HQDA-LTR 11-88-2

3. Applicability. This appendix applies to all Huntington District team members, who in the performance of their duties, may be exposed to toxic or hazardous materials. Contractors should refer to EM 385-1-1, Section 08, and 29 CFR 1910.1200.

4. Responsibilities.

a. District Commander will ensure compliance with the Hazard Communication Program.

b. The Safety & Occupational Health Office will assist and advise team leaders in implementing the Hazard Communication Program at all levels and provide assistance in establishing the training program and developing engineering controls. Upon completion of the required training the Safety & Occupational Health Office will be notified in writing of the training dates and names of team members completing the training.

c. Team leaders will schedule hazard communication training for team members who may be exposed to toxic or hazardous materials in the performance of their duties. New team members will be briefed and informed of the hazard communication program and scheduled for formal training at the next available training session.

d. Team members are responsible for exercising proper respiratory controls and required to wear personal protective equipment when using or working with toxic or hazardous materials and reporting to their team leader any new materials procured or changes in conditions of materials on hand.

5. General. The hazard communication standard is an essential part of the total occupational health program and its purpose is to inform and protect team members who

may be exposed to toxic and hazardous materials in the work place. All elements and field offices have been furnished a copy of the Hazard Communication Program (yellow binder). The Hazard Communication Program consists of the following:

a. Hazard Communication Program Document. The program is the document directing all District elements to establish, implement and train team members in the Hazard Communication Program.

b. Material Safety Data Sheets (MSDS). Material Safety Data Sheets are required for all items listed on project toxic and hazardous materials inventories. These should be readily available for use and referenced when any toxic or hazardous materials will be used.

c. Toxic and Hazardous Materials Inventory.

(1) ER 385-1-40 (Occupational Health Program) and OSHA's Hazard Communication Standard, require projects to maintain a hazardous material inventory list at the project and furnish a copy annually to the Safety and Occupational Health Office.

(2) ORH Form 2760 (Toxic and Hazardous Material Inventory) (see page N-3) is used for documentation of the materials inventory. Items should be listed numerically and each Material Safety Data Sheet (MSDS) correspondingly numbered so the inventory serves as an index of the MSDS. If you do not have a MSDS for items on inventory, immediate action should be taken to procure them. Be very specific when listing individual items; for example: list "Hyvar XL" and its strength rather than listing "herbicide." In addition to brand names of wood preservatives, note whether it contains Pentachlorophenol or creosote and its concentration.

(3) The following is a generic guide of typical items used which should be included in the inventory and is not all inclusive. Any additional items which are considered to be toxic or hazardous need to be included on the inventory.

Acid (bathing and other)
Bleach (in quantities used in treatment plants)
Chemicals
Combustible Liquids
Degreasers
Gasoline-Kerosene

Diesel Fuels (No. 1 & No. 2)
Herbicides
Compressed Gases
Pesticides
Rustproofing Compounds
Solvents
Strong Alkali
Thinners
Paints, Varnishes, Lacquers
Wood Preservatives
Welding Rods
Hydraulic Oils

(4) Common household items used for their intended purpose in common quantities should not be listed on the inventory. Automotive products commonly used at home, which are fully consumed during their use, used in common quantities and for their intended purpose should not be listed. Automotive products which are not fully consumed during their use such as, motor oil, anti-freeze, etc., should be listed and a MSDS procured for each item. The MSDS provides instructions for proper handling and disposal methods of the items. Final disposition of the waste material must be coordinated with the Logistics Management Office.

d. Training.

(1) HQDA Letter 11-88-2 dated 7 October 1988, Subject: Implementation of Hazard Communication Program, requires all team members who are occupationally exposed to hazardous chemicals/materials to be trained or to be certified as having received equivalent training to meet requirements of the Hazard Communication Standard. Training is to be documented on DD Form 1556 (Request, Authorization, Agreement, Certification of Training) and incorporated as a permanent

part of the employee's official personnel folder. In Block 18 of the DD Form 1556 the following statement will be annotated: "Do Not Destroy. Retain this record for duration of employment plus 30 years."

(2) Training is to be accomplished in accordance with the Department of Defense Federal Hazard Communication Training Program No. 6050.5-G-1 to include the following subjects:

(a) The Federal Hazard Communication Standard.

(b) Chemical Forms and Exposure Hazards.

(c) Types of Physical and Health Hazards.

(d) Controlling Chemical Hazards.

(e) Introduction to MSDS's and MSDS Physical Hazard Information.

(f) MSDS Health Hazard Information.

(g) Using Labels and the Hazardous Chemical Inventory.

(3) A copy of 29 CFR 1910.1200, Hazard Communication Standard, will be made available to affected team members.

e. Labeling. All toxic and hazardous materials which are unlabeled, improperly labeled or are transferred to a secondary container for a time period greater than one work shift, must be labeled in accordance with the Hazard Communication Standard. Commercially produced labels are available through the District Stockroom.

Page ____ of ____

DATE SUBMITTED

SAMPLE

So

APPENDIX O
Respiratory Protection Program

1. For U.S. Army Corps of Engineers, Huntington District,
Element/Project/Workgroup _____

2. Person Responsible for Administration of program at
Location _____,
(Name)

Name _____

Title _____, Date _____.

3. Purpose. The purpose of this program is to ensure the protection of all team members from respiratory hazards through the proper use of respirators. Respirators are to be used only where engineering control of respiratory hazards is not feasible, while engineering controls are being installed, or in emergency situations.

4. Application. This program applies to all sites where respirators are utilized and applies to all District team members required to wear respirators in the performance of duties.

5. References. EM385-1-1 (Safety and Occupational Health Requirements Manual)
Para. 07.B and Para. 8.H,
Para. 14 and Para. 27
CFR 29, Parts 1910.134
ORHR 385-2-3, APP L (Medical Surveillance Program)
ANSI Standard Practices for Respiratory Protection
Z88.2-1969
AR 11-34 (The Army Respiratory Protection Program)

6. Essential Elements of a Respiratory Protection Program.

a. Written program document which establishes procedures and assigns responsibilities.

b. Engineering control measures to reduce the contaminant level.

c. Respirator Selection Criteria.

d. Medical Surveillance.

e. Respirator Fit Testing.

f. Work Area Surveillance.

g. Respirator Inspection and Maintenance.

h. Employee Training.

7. Responsibility.

a. The Safety and Occupational Health Office is responsible for developing, evaluating and assuring implementation of the program. The Safety and Occupational Health Office will develop written detailed instructions covering each of the basic elements for the program.

b. Team leaders have the responsibility to assure the respirator program is administered at their site including assurances that proper respirators are used, stored, and maintained at their site. They will be responsible to see that proper training occurs and proper surveillance of work areas are performed.

c. Team members will be responsible to comply with the elements of the program; to wear the proper respirators in the required areas and to use, store, and maintain respirators properly.

d. Engineering Controls. Where feasible, engineering controls shall be used in lieu of respirators. Engineering controls lower the concentration of contaminants at the workers breathing zone to levels below the Permissible Exposure Level (PEL) without the use of respirators. Engineering controls can also remove or lower the concentration of contaminant being generated. A few examples of engineering controls are general ventilation, dilution ventilation, local ventilation, isolation or enclosure of team members and/or contaminant source.

e. Examples of Some Contaminants for Which Respirators Will Be Used.

(1) Hydrogen sulfide, dusts, silica.

(2) Asbestos, lead, organic solvents (paint, glues).

(3) Other respiratory hazards such as oxygen deficient atmospheres will require respiratory protection.

f. **Respirator Selection.** Only NIOSH/MSHA approved respirators shall be used. The selection of respirators will be made by the project manager as a result of work area surveillance, manufacturer consultation, training, or consultation with the safety office and/or referencing Tables 1-1, 1-2 and 1-3 of App O; and Inserts 1, 4 and 5 of App Q. Selection shall fall within the following categories of Respiratory Hazards:

(1) **Oxygen Deficient Atmospheres** (less than 19.5% – Airline or self-contained breathing apparatus (SCBA's)) and Emergency Use Respirators.

(a) This could occur in confined spaces such as wells, mines, barge holds, tanks, burning buildings, sluice ways, galleries, and areas where inert, toxic, or flammable substances could accumulate.

(b) Only air supplied respirators shall be used in oxygen deficient atmospheres.

(i) These include a self-contained breathing apparatus or airline respirators with reserve air supply.

(ii) Standby persons with rescue equipment must be present when air supplied respirators are used.

(c) No individual shall enter an oxygen deficient or potentially oxygen deficient environment without proper procedures and clearance as covered under Confined Space Entry Procedures document.

(d) Emergency use respirators shall be a SCBA or Airline respirator with reserve air supply.

(2) **Gas and Vapor Contaminants.**

(a) Gases include Ammonia, Chlorine, etc.

(b) Vapors include vapors from organic solvents, such as Toluene, Xylene, Methylene Chloride, etc.

(c) At a minimum, approved one-half mask or full-face charcoal canister type respirators are to be used. No paper masks are approved at this time for gas or vapor contaminants. One-half mask respirators provide protection (protection factor) up to 10 times the PEL.

(d) If the vapor or gas lacks adequate warning properties, only SCBA or Airline type respirators shall be used. (Reference Insert 1 for these: Carbon Monoxide and Hydrogen Sulfide.)

(e) Canisters shall be replaced when breakthrough occurs. Break-through has occurred when the warning odor or taste is identified through the mask. The team member shall immediately leave the contaminated area to change canisters.

(3) **Particulate Contaminants.**

(a) These may include dust, smoke, fumes or mists, such as silica dust, welding fumes, acid mist, etc.

(b) Approved one-half mask, or full-face masks with filter type cartridges or approved 2-strap paper masks may be used for particulates.

(c) As particulates build up on the filters, the breathing resistance increases. This is similar to breakthrough on Gas or Vapor cartridges. Particulate cartridges must also be changed while in a safe environment.

(4) **Selection Guidance.**

(a) When selecting respirators for normal day-to-day operations such as painting, cleaning, grinding, etc., first consider the respiratory hazard. Is it a dust from grinding or sweeping? Is it a chemical vapor from painting or cleaning? Is it a pesticide? Refer to the MSDS to see what is in the cleaning compound, paint, etc. Then a determination of airborne concentration of the chemical needs to be made. Air monitoring is the most accurate means to determine this. However, it is not always possible to do air monitoring because of resource allocation. Frequent experience has shown that a one-half mask Air Purifying Respirator (APR) with the proper approval is sufficient protection against the respiratory hazards encountered in our day-to-day operations such as welding, painting, cleaning, grinding, etc. Read the label on the cartridge. It tells what contaminants the cartridge may be used for. Make sure the cartridges are approved by MSHA or NIOSH and have a testing and certification (TC) number. Use only cartridges from the same manufacturer as the respirator.

There is a reference manual in the Occupational Safety and Health Office which contains all the current TC numbers and respective approvals.

(b) For sandblasting, as a minimum, an airline hood respirator is necessary.

(c) For confined space entry into unknown atmospheres or oxygen deficient atmospheres, an SCBA or airline respirator with emergency air bottle is required.

(5) Selection Overview. For emergency escape, an SCBA, emergency air bottle or full-face canister respirator should be selected. (See Appendix O, Table 1-4 Protection Factors.) SCBA's are the most protective respirator. They have protection factors of 10,000. This means they can be worn in atmospheres 10,000 times more concentrated than the OSHA Permissible Exposure Limit. For welding, cutting or heating on beryllium or lead containing materials, as a minimum, an airline respirator is required. This respirator offers protection at 2,000 times the PEL. The 2-Strap paper mask offers protection at 10 times the PEL for Dusts and Particulates. Half-mask cartridge respirators offer protection of 10 times the PEL. The half-mask and 2-strap paper mask will probably be the most widely used. Reference Appendix O Table 1-2 for a thorough listing of protection factors.

(6) When selecting a respirator, make sure the contaminant is not listed in Insert 1. Those chemicals listed in this insert have poor warning properties and only SCBA or Airline respirators can be used.

g. Respirator Fitting and Fit Testing

(1) Proper fitting shall be performed to assure an adequate seal between the face and respirator. Check that it fits securely, but not too tight around your chin, doesn't pinch your nose, doesn't slip, and leaves room to move your head and to talk.

(2) Positive/Negative fit testing shall be performed by all team members following placement of the respirator on the face. The test involves the following:

(a) Negative pressure test procedure.

(i) Close off inlet of the canisters of filters by covering with the palms of your hands.

(ii) Inhale so the facepiece collapses slightly and hold your breath for a few seconds.

(iii) If the facepiece remains slightly collapsed and no inward leakage of air is detected, a good seal is indicated.

(b) Positive pressure test procedure.

(i) Cover the exhalation valve.

(ii) Exhale gently into the facepiece for a few seconds. If a slightly outward pressure can be sustained without any leakage detected, a good seal is indicated.

(iii) The exhalation valve cover may have to be removed to perform this test.

(iv) If both of these tests fail to indicate a good seal, the respirator should be inspected and any defects shall be corrected. The test can then be redone. If the test continues to fail, try a different size or manufacturer.

(3) The site team leader shall perform annual qualitative fit testing in a test atmosphere of Isoamyl Acetate. The Industrial Hygienist will train the team leaders to perform this test. The qualitative fit test involves the following from ER 385-1-90:

(a) Isoamyl Acetate (Banana Oil). This test relies on the users' ability to smell the organic vapor; isoamyl acetate. Confirm that the team member can detect the Banana oil odor first before the respirator is donned. Air purifying respirators (to be fit by this method) must be equipped with organic vapor cartridges or canisters. Saturate a piece of fabric, cotton, or sponge with liquid isoamyl acetate and move it around the respirator worn by the person being tested. The banana oil should be passed close to potential leak points in the facepiece to face seal while the wearer carries out exercises such as normal breathing, turning the head side to side, nodding up and down, and talking. If the wearer can detect the odor without the respirator but not when wearing it, a satisfactory fit has been achieved. If the wearer is unable to obtain a satisfactory fit after several readjustments of the straps, a different size or brand respirator should be tried.

(b) Respirators shall not be worn when conditions prevent a good face seal. Such conditions may be a growth of beard, sideburns, a skullcap that projects under the face piece, or temple pieces on glasses. At such time as an team member is required to wear a respirator on the job, he or she shall have no facial hair which interferes with the face-to-respirator seal.

(c) Glasses cannot be worn with full-face respirators since they can affect the face-to-respirator seal. Contact CEORH-SO for alternatives.

(d) Contact Lenses shall not be worn in respirators that cover the eyes. Contacts can be contaminated and damage the eye. If the wearer experienced a problem with a contact lens while wearing

a full-face respirator the team member would not be able to correct the problem without jeopardizing the seal.

(e) There will likely be team members who, due to the size or shape of their face, cannot achieve a proper seal. These team members shall not be allowed to wear a respirator which relies on a face-to-respirator seal.

h. Issuance of Respirators.

(1) Only NIOSH/MSHA approved respirators will be used.

(2) They will be made available and issued as determined by work area surveillance and the selected sections of this document.

(3) When respiratory protection is required, respirators will be issued to individual team members as personal equipment. However, emergency equipment such as SCBA's and escape only respirators do not have to be assigned. Since anyone may need to use them at any time.

(4) Team members shall not use a respirator unless it has been determined by a physician that they are medically fit to use a respirator. This medical approval shall be reviewed at least annually or sooner if a known change in the medical condition of said team member warrants. Medical approval must have written documentation. Medical Surveillance shall include:

(a) Those employees who wear a respirator for less than 3 weeks annually shall receive:

- (i) Employment History
- (ii) Medical History
- (iii) Pulmonary Function Test

(b) Those employees who wear a respirator for a cumulative total of 3 weeks or greater annually shall receive:

- (i) Employment History
- (ii) Medical History
- (iii) Pulmonary Function Test
- (iv) Chest X-ray
- (v) Other Tests For Cause

CEORH Form 2849, Employment Respiratory Exposure History form, is included as Insert 5.

(5) Special use respirators (emergency SCBA's and full-face canister type) used for emergency escape, rescue, etc. will be available at the location where there is a potential for an Immediately Dangerous to Life and Health (IDLH) atmosphere such as around chlorine and ammonia tanks. (See Insert 3)

i. Cleaning, Inspection, Maintenance, and Storage of Respirators.

(1) Each team member who uses a respirator shall clean and inspect it before and after use.

(2) The procedure outlined in Insert 2 describes the procedure for cleaning and inspecting.

(3) Respirators found to be defective shall be returned to the project manager for replacement.

(4) All respirators shall be stored in a convenient location sealed in a clean plastic bag and labeled to identify assignee.

(5) Respirators shall be stored so that permanent deformation of the face-piece will not occur.

(6) Special use respirators (emergency SCBA's, full-face canister type and airline respirator with reserve air bottle) shall be inspected monthly and before and after use. A log of the inspections shall be kept at each project and available for inspection. Low pressure alarms shall be checked. Only grade D breathing air shall be used in SCBA and SAR (See Appendix C). No pure oxygen shall be used because of the fire hazard. Tanks for SCBA's shall be inspected monthly to see the tanks are at least 90% - 100% full. Metal SCBA air tanks shall be hydrostatically tested every 5 years, composite tanks every 3 years, and written documentation shall be kept at each project. See attached Insert 2 for SCBA inspection procedures. All oil lubricated breathing air compressors shall have a high temperature alarm and a carbon monoxide alarm.

j. Work Area Surveillance.

(1) When work is performed in areas where respiratory hazards may be encountered, the site team leader shall consider potential respiratory hazards that may be encountered and include them in the JHA. Operations may include grinding, sweeping, painting, welding, sandblasting, etc.

(2) MSDS's are a good resource for evaluating potential respiratory hazards.

(3) Air monitoring shall be conducted to determine the extent of the respiratory hazard. This will be performed by the Safety Office after identification of potential exposures during site visit or by written requests filed with the Safety Office involving concerns of contaminant exposures that may be above the OSHA-PEL. The requests will be addressed by priority, which the Safety Office Chief shall establish, based on available resources.

(4) Any uncertainty concerning respiratory hazards shall be discussed with CEORH-SO team members.

(5) Selection of respirators shall be based on the work area surveillance.

(6) Team member stress level during strenuous operations shall be observed and appropriate adjustment of the workload shall be made as necessary. This may include frequent breaks or breaking the work up utilizing alternate work schedules, or alternating the team members.

(7) It is recommended that the Safety and Occupational Health Office be contacted for advice when any new or unique operation or process is encountered that may expose team members to new respiratory hazards.

k. Training and Program Evaluation.

(1) CEORH-SO team members shall review annually the effectiveness of the program. The effectiveness shall be gauged by CEORH-SO team members based on site visitation and/or questionnaire to be filled out and submitted by the site manager or completed by the Safety and Occupational Health Office representative while conducting the safety management evaluation.

(2) Initially, the District Industrial Hygienist shall train the team leaders who will subsequently train their team members in the proper use and limitations of respirators. Training will also provide the team members an opportunity to handle the respirator, show them how to wear it properly, test for a good seal, and how to clean, inspect and store it. The contents of this written program will also be covered. The team leader shall assure annual refresher training is conducted to confirm that the team member still understands the elements covered in the

initial training. A DD 1556 (Request, Authorization, Agreement, Certification of Training and Reimbursement) shall be completed for each team member who completes respiratory protection training. A copy of the DD 1556 shall be inserted in each participant's personnel file and remain there for the duration of employment plus 30 years.

8. DEFINITIONS.

Air Purifying Respirator (APR) – A device worn by a person that removes contaminants from his or her breathing air by means of a fiber filter, a charcoal filter or some other media.

Breakthrough – When the respirator cartridge becomes saturated with the contaminant it is removing, it no longer can absorb the contaminant which in turn will enter the respirator facepiece.

Canister – It is the same as a cartridge except it has a larger capacity and a longer service life.

Cartridge – A container attached to the respirator air flow. It has a fiber filter, activated charcoal or combination of these which remove contaminants from the air as it flows through the cartridge into the respirator. Cartridges are approved for removal of specific contaminants and these are listed on the cartridge.

Contaminant – The chemical, dust, mist or fume in the team member's breathing air for which engineering controls and respirators are designed to remove.

Ceiling Concentration – A concentration of contaminant in the air measured by air monitoring. It is a level of air contamination which is never to be exceeded. The ceiling concentration is designated in parts per million (ppm). This level is enforced by OSHA.

Concentration – For this program, the word implies airborne concentration. It refers to a level of contaminants in the air expressed in ppm. Standards are based on concentrations of airborne contaminants.

Dust – Particles in the air which are generated by mechanical abrasion of a solid material.

Emergency Escape Respirator – A respirator designed to use as emergency escape from atmospheres that have become toxic due to a sudden unexpected release of chemical. These are SCBA's and full-face canister respirators.

Full-Face Respirator – An APR or SAR in which the mask covers the whole face and seals on the perimeter of the face. The mask has a shatter-resistant eyepiece. The mask protects the whole face and eyes from chemical contamination when the respirator is functioning properly.

Fume – A particle condensed from molten metal evaporated and condensed. This will usually be seen as a smokey haze such as around welding operations.

Gas – A fluid that is in the gaseous state at ordinary room temperature. Acetylene is a gas.

Half-Mask Respirator – A respirator that has a mask which covers the nose, mouth and chin. It affords no eye protection.

Immediately Dangerous to your Life and Health (IDLH) – An atmosphere that poses an immediate hazard to life and health such as an oxygen deficient atmosphere, an explosive atmosphere, an atmosphere filled with highly toxic levels of contaminant, etc.

Material Safety Data Sheet (MSDS) – Written or printed material which is prepared by the chemical manufacturer or the importer. It contains the pertinent Health and Safety hazards and PPE data as required under OSHA 29 CFR 1910.1200 hazard communication standard.

Mist – A liquid that has evaporated and condensed into small liquid droplets.

Negative Pressure Respirator – A respirator which the wearer draws air through the cartridges by exerting a slight suction on the mask while inhaling. An example is a typical half-mask cartridge respirator.

Odor Threshold Limit – The lowest level of a contaminant in the air which can be detected by smell.

Oxygen Deficient Atmosphere – An atmosphere containing less than 19.5% Oxygen or 195,000 ppm.

Normal air contains 20.9% or 209,000 ppm. Less than 19.5% Oxygen is IDLH.

Particulates – A suspension of fine solids or liquid droplets in air. Examples are dust, fume, mist and smoke.

Parts Per Million (ppm) – The unit by which the level of air contaminants are expressed. The number of contaminant molecules per million molecules of normal atmospheric gases (air). It is similar to percentages which are parts per hundred.

Permissible Exposure Limit (PEL) – The highest allowable level of air contaminant allowed by Federal Law. It is enforced by OSHA and expressed in ppm. It is different from ceiling concentration in that levels of air contaminants are measured then averaged for an eight-hour work shift.

Positive Pressure Respirator – An air supplied respirator which always has a slight outward pressure inside the mask. An SCBA is an example of this type of respirator.

Protection Factor – The degree of protection provided by a respirator. It is usually expressed in multiples of the PEL.

Respirator – A device which protects the wearer from inhalation of contaminants.

Supplied Air Respirator (SAR) – A type of respirator that does not filter air but uses a separate clean air supply such as a tank or air-compressor.

Self Contained Breathing Apparatus (SCBA) – A type of respirator that has its own air supply attached. Usually a tank of air is located on the wearer's back.

Warning Properties – The ability for a contaminant to be detected by a person's senses. Chemicals may have sweet, sour, bitter odors, etc. They may be irritating to the eyes.

INSERT 1

**Contaminants For Which Chemical Cartridge Respirators Should Not Be Used
(These Chemicals Have Poor Warning Properties)**

The following is list of gaseous contaminants against which Chemical Cartridge Respirators should not be used. It should be noted that this list is not complete and is offered only as a guide to proper evaluation of the many contaminants found in industry.

Additional Sources of Information are as follows:

Dangerous Properties of Industrial Materials. Sax, Irving N., Van Nostrand Reinhold Co., New York: 1968

Occupational Diseases – A Guide to Their Recognition. Gafafer Wm. Ed., U.S. Government Printing Office, Washington: 1964

1. Acrolein
2. Acrylonitrile
3. Aniline
4. Arsine
5. Bromine
6. Carbon Disulfide
7. Carbon Monoxide

8. All Carcinogens
9. Dimethylaniline
10. Dimethyl Sulfate
11. Hydrogen Cyanide
12. Hydrogen Fluoride
13. Hydrogen Selenide
14. Hydrogen Sulfide
15. Methyl Bromide
16. Methyl Chloride
17. Methylene Bisphenyl
18. Nickel Carbonyl
19. Nitrobenzene
20. Nitrogen Dioxide
21. Nitroglycerine
22. Nitromethane
23. Ozone
24. Phosgene
25. Phosphine
26. Phosphorus Trichloride
27. Stibine
28. Sulfur Chloride
29. Toluene Diisocyanate

INSERT 2
CLEANING AND INSPECTION OF RESPIRATORS

Respirators shall be cleaned, disinfected, inspected and properly stored after each use.

Cleaning

Remove cartridges. The respirator shall be thoroughly washed with a detergent in warm water with a brush, rinsed in clean water and allowed to air dry. Commercially available cleaning and sanitizing solutions may also be appropriate.

Inspection

Respirators shall be field inspected before and after use when disassembled during cleaning. The field inspection taken from the NIOSH publication suggests:

FIELD INSPECTION

Air-Purifying Respirators

Routinely used air-purifying respirators should be checked as follows before and after each use.

(a) Examine the facepiece for:

Excessive dirt,
Cracks, tears, holes, or distortion from improper storage,
Inflexibility (stretch and massage to restore flexibility),
Cracked or badly scratched lenses in full facepieces,
Incorrectly mounted full facepiece lens or broken or missing mounting clips,
Cracked or broken air-purifying element holder(s),
badly worn threads, or missing gasket(s) (if required).

(b) Examine the headstraps or head harness for:

Breaks,
Loss of elasticity,
Broken or malfunctioning buckles and attachments,
(Full facepieces only) Excessively worn serrations on the head harness which might permit slippage.

(c) Examine the exhalation valve for the following after removing its cover:

Foreign material, such as detergent residue, dust particles, or human hair under the valve seat,
Cracks, tears, or chips in the valve material,
Improper insertion of the valve body in the facepiece,

Cracks, breaks, or chips in the valve body, particularly in the sealing surface,

Missing or defective valve cover,

Improper installation of the valve in the valve body.

(d) Examine the air-purifying elements for:

Incorrect cartridge, canister, or filter for the hazard,
Incorrect installation, loose connections, missing or worn gaskets, or cross-threading in holder,

Expired shelf-life date on cartridge or canister, cracks or dents in outside case of filter, cartridge, or canister,

Evidence of prior use of sorbent cartridge or canister, indicated by absence of sealing material, tape, foil, etc., over inlet.

(e) If the device has a corrugated breathing tube, examine it for:

Broken or missing end connectors,

Missing or loose hose clamps,

Deterioration, determined by stretching the tube and looking for cracks.

(f) Examine the harness of a front-or back-mounted gas mask for:

Damage or wear to the canister holder which may prevent its being held securely in place,
Broken harness straps or fastenings.

Supplied-Air Respirators

For a routinely used atmosphere-supplying device, use the following procedures:

(a) If the device has a tight-fitting facepiece, use the procedure outlined above for air-purifying respirators, except those pertaining to the air-purifying elements:

(b) If the device is a hood, helmet, blouse, or full suit, use the following procedures:

Examine the hood, blouse, or full suit for rips and tears, seam integrity, etc.,

Examine the protective headgear, if required, for general condition, with emphasis on the suspension inside the headgear,

Examine the protective faceshield, if any, for cracks or breaks or impaired vision due to rebounding abrasive particles,

Make sure that the protective screen is intact and secure correctly over the faceshield of abrasive blasting hoods and blouses.

(c) Examine the air supply system for:

Integrity, the condition of air supply lines and hoses, including attachments and end fittings,

Correct operation and condition of all regulators, valves, or other air-flow regulators.

On SCBA's, determine that the high-pressure cylinder of compressed air or oxygen is sufficiently charged for the intended use, preferably fully charged (mandatory on an emergency device). On closed-circuit SCBA's, make sure that a fresh canister of carbon monoxide sorbent is installed before use, or that the total use time on the canister is known. An open-circuit SCBA's, recharge the cylinder if less than 25% of the useful service time

remains. All these SCBA's are required to have a warning device that indicates when this point is reached. However, it is much preferred that an open-circuit SCBA be fully charged before use.

When an air-purifying or supplied-air respirator is used nonroutinely, all the above procedures should be followed after each use. OSHA requires that devices for emergency use be inspected once a month and that "a record shall be kept of inspection dates and findings for respirators maintained for emergency use."

If defects are found during any field inspection, two remedies are possible. If the defect is minor, repair and/or adjustment may be made on the spot. If it is major, the device should be removed from service until it can be repaired. Under no circumstances should a device that is known to be defective be used. Only manufacturer authorized replacement parts shall be used for repair.

INSERT 3
Checklist for Respirator Program Inspection (Y/N)

1. Administration of Program

- a. Individual vested with authority for program:

(Name)

- b. Knowledge and training of all aspects of program and equipment used? (Y/N) _____

2. Inspection of Program

- a. Respirators used only when engineering controls aren't feasible or are being instituted? (Y/N) _____

- b. Number of team members who use respirators.

- c. Number of team members trained. ____ By whom.

(Name)

- d. Number of team members fit tested this year. ____
Method. _____

- e. Number of team members who received physical.

3. Storage

- a. Convenient location and labeled? (Y/N) _____

- b. Clean plastic bag? (Y/N) _____

- c. Stored so facepiece isn't deformed? (Y/N) _____

4. Inspection & Cleaning

- a. Emergency devices inspected how often? _____

- b. Routine devices inspected how often? _____

- c. Routine devices cleaned before and after use?
(Y/N) _____

INSERT 4
Selection Options for Escape Respirators

Escape Conditions	Type of Respirator
Short distance to exit, no obstacles (no oxygen deficiency)	Any escape gas mask ^{1/} (canister respirator) or gas mask (canister respirator)
	Any escape self-contained breathing apparatus having a suitable service life ^{2/}
	Any acceptable device for entry into emergency situations
Long distance to exit or obstacles along the way (no oxygen deficiency)	Any gas mask
	Any escape self-contained breathing apparatus having a suitable service life ^{2/}
	Any self-contained self-rescuer having a suitable service life
Potential oxygen deficiency	Any escape self-contained breathing apparatus having a suitable service life ^{2/}
	Any self-contained self-rescuer having a suitable service life

^{1/} An escape gas mask is a respirator designed for use during escape only from immediately dangerous to life or health (IDLH) or non-IDLH atmospheres. It may consist of a half mask facepiece or mouthpiece, appropriate air-purifying element for the contaminant, and associated connections. Maximum use concentrations for these types of respirators are designated by the manufacturer.

^{2/} Escape self-contained breathing apparatus can have rated service lives of 3 to 60 minutes. All acceptable devices for entry into emergency situations can also be used.

INSERT 5

DEPARTMENT OF THE ARMY
HUNTINGTON DISTRICT, CORPS OF ENGINEERS
502 Eight Street
HUNTINGTON, WEST VIRGINIA 25701-2070

EMPLOYMENT RESPIRATORY EXPOSURE HISTORY

Employee Name: _____ Occupation: _____

1. Are you currently a tobacco smoker? YES ___ NO ___. Daily average amount smoked _____
If you previously smoked, how many years? _____ When did you quit? _____

2. Do you have a history of respiratory disease? YES ___ NO ___. If yes, please note
asthma ___ emphysema ___ chronic lung disease ___ other _____

WORK HISTORY

a. Have you been exposed to asbestos, silica, cotton dust, lead or any other known hazardous agents in the past 10 years? YES ___ NO ___. If yes, please list those agents and describe exposure.

b. Please list your previous occupations and employers in the past 10 years.

c. Have you ever had problems associated with breathing during normal work activities? YES ___ NO ___. If yes, please describe.

d. Have you ever had problems with your voice? YES ___ NO ___. If yes, please describe.

SAMPLE

3. Do you have claustrophobia? YES ___ NO __.

4. Do you have any physical deformities that might interfere with respirator use? YES ___ NO ___. If yes, please describe.

5. Are you aware of any reason (medical or otherwise) which would indicate that you shouldn't wear a respirator? YES ___ NO ___. If yes, please explain.

6. Please list any medications that you are currently taking.

7. Can you tolerate the following: Increase heart rate YES ___ NO ___
Heat stress YES ___ NO ___

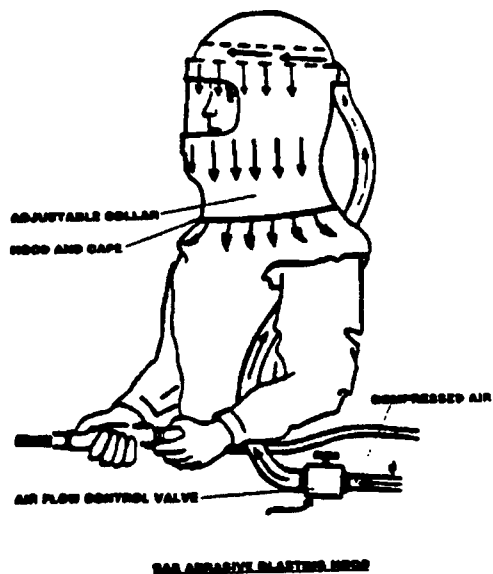
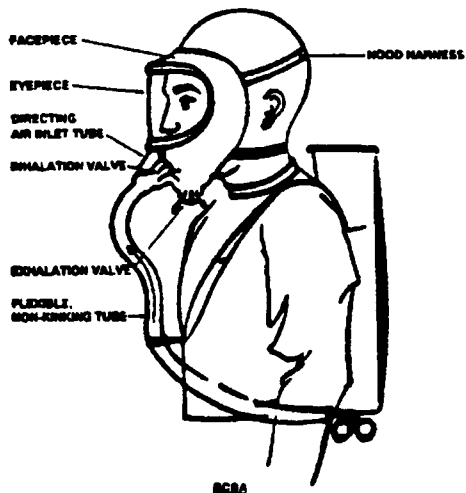
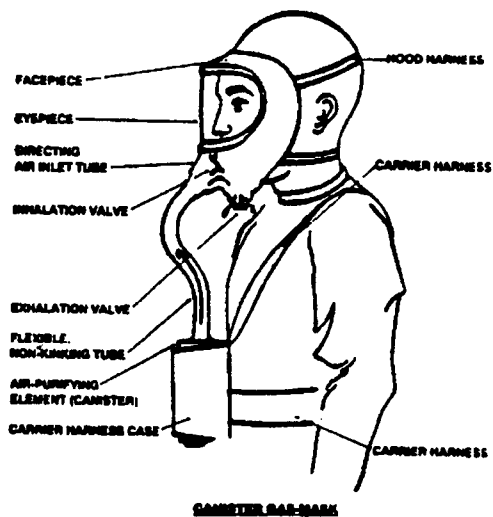
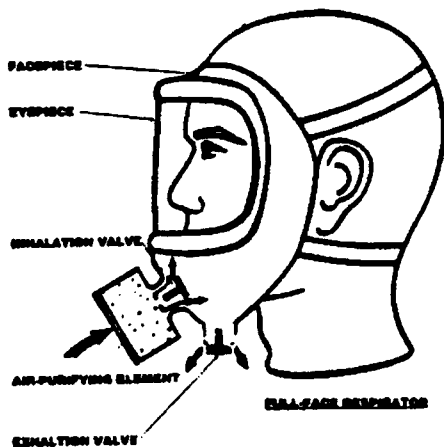
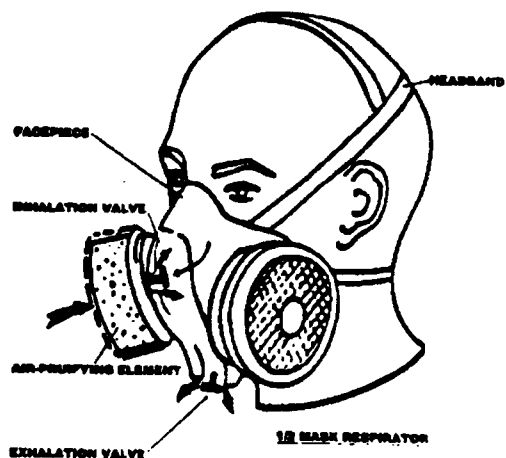
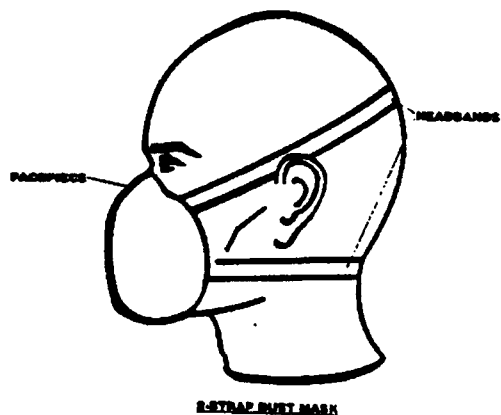
I certify that the above information is true and complete to the best of my knowledge.

Signature _____ Date _____

THIS INFORMATION IS FOR OFFICIAL AND MEDICALLY-CONFIDENTIAL USE ONLY AND
WILL NOT BE RELEASED TO UNAUTHORIZED PERSONS. PRIVACY ACT STATEMENT ON REVERSE.

DATA REQUIRED BY THE PRIVACY ACT OF 1974 (5 u>s>c>552A)		
TITLE OF FORM Respiratory Health		PREScribing DIRECTIVE AR 40-501
1. AUTHORITY U.S. CODE; TITLE 5, SECTION 7901; AND U.S. CODE; TITLE 10, SECTION 3012 EXECUTIVE ORDER 9397 and EXECUTIVE ORDER 11807:		
2. PRINCIPAL PURPOSE(S) This form provides you the advice required by the Privacy Act of 1974 The personal information will facilitate and document your health care. The Social Security Number (SSN) of member or sponsor is required to identify and retrieve health care records.		
3. ROUTINE USES THE PRIMARY USE OF THIS INFORMATION IS TO PROVIDE, PLAN AND COORDINATE HEALTH CARE. AS PRIOR TO ENACTMENT OF THE PRIVACY ACT, OTHER POSSIBLE USES ARE TO: AID IN PREVENTIVE HEALTH AND COMMUNITY DISEASE CONTROL, PROGRESS REPORT MEDICAL COUNCILS, AIR FORCE, NAVY, MARINE, STAFF AND LOCAL AGENCIES; COMPLETE STATISTICAL DATA; CONDUCT RESEARCH; TEACH; OTHER LAWFUL PURPOSE; INCLUDING CONDUCT AUTHORIZED INVESTIGATIONS; EVALUATE CARE RENDERED;		
4. MANDATORY OR VOLUNTARY DISCLOSURE AND EFFECT ON INDIVIDUAL NOT PROVIDING INFORMATION THE REQUESTED INFORMATION IS VOLUNTARY. IF THE REQUESTED INFORMATION IS NOT FURNISHED, COMPREHENSIVE HEALTH CARE MAY NOT BE POSSIBLE, BUT CARE WILL NOT BE DENIED. YOUR SIGNATURE MERELY ACKNOWLEDGES THAT YOU HAVE BEEN ADVISED OF THE FOREGOING. IF REQUESTED A COPY OF THIS FORM WILL BE FURNISHED TO YOU.		
SIGNATURE OF PATIENT OR SPONSOR	SSN OF MEMBER OR SPONSOR	DATE

APPENDIX O Respiratory Protection Program



Appendix P
CONFINED SPACE ENTRY PROGRAM

1. For U.S. Army Corps of Engineers, Huntington District,
Element/Project/Office _____.

2. Person responsible for administration of program at

Location _____

Name _____

Title _____ Date _____

3. Names and Title of Qualified persons:

4. **Purpose.** The purpose of this program is to ensure the protection, of all District team members and contractors involved in confined space entry, from the hazards likely encountered in confined space entry.

5. **Application.** This program applies to all sites where confined space entry is performed and applies to all team members' including contractor workers involved in confined space entry.

6. **Responsibility.**

a. The Safety and Occupational Health Office is responsible for developing, evaluating and assuring implementation of the program. CEORH-SO will develop a written program detailing each program element.

b. Site supervisors and managers have responsibility to assure the program is administered at their site.

c. Team members are responsible to comply with program elements that apply to them.

7. **References.** EM 385-1-1 (Safety and Health Requirements Manual)
NIOSH Criteria Document for Confined Space Entry
The proposed OSHA Confined Space Entry Standard
ACGIH TLV and Biological Exposure Indices

OSHA 29 CFR 1910; OSHA
General Industry Standards
OSHA 29 CFR 1926; OSHA
Construction Standards
OSHA 29 CFR 1917; OSHA
Maritime Standards
NFPA 70; National Electrical Code

8. **Definitions.**

Atmosphere – The gases, vapors, mists, fumes, and dusts within a confined space.

Ceiling Level – The maximum airborne concentration of a toxic agent to which a team member may be exposed for a specified period of time.

Combustible Dust – A dust capable of undergoing combustion or of burning when subjected to a source of ignition.

Confined Space – Any space having limited openings for entry and exit, not intended for continuous occupancy, and unfavorable natural ventilation which could contain or have produced dangerous concentrations of airborne contaminants or asphyxiates. Confined spaces may include but are not limited to storage tanks, holds of vessels, manholes, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines, trenches, vats, and open-top spaces more than 4 feet in depth such as pits, tubs, vaults and vessels, or any place with limited ventilation.

Confined Space, Class "A" – A confined space that presents a situation that is immediately dangerous to life or health (IDLH). These include but are not limited to oxygen deficiency, explosive or flammable atmospheres, and/or concentrations of toxic substances.

Confined Space, Class "B" – A confined space that has the potential for causing injury and illness, if preventive measures are not used, but not immediately dangerous to life and health.

Confined Space, Class "C" – A confined space in which the potential hazard would not require any special modification of the work procedure.

Hazardous Atmosphere – An atmosphere which exposes team members to a risk of death, incapacitation,

injury or acute illness from one or more of the following causes:

(1) A flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);

(2) An airborne combustible dust at a concentration that obscures vision at a distance of five feet (1.52 m) or less;

(3) An atmospheric oxygen concentration below 19.5 percent or above 22 percent;

(4) An atmospheric concentration of any substance for which a permissible exposure limit is published in Subpart Z of 29 CFR Part 1910 and could result in team member exposure in excess of its permissible limit(s). When an air contaminant for which OSHA has not determined a permissible exposure atmosphere is present, OSHA recommends team leaders consult other sources of information, such as Material Safety Data Sheets which comply with the Hazard Communication Standard, 29 CFR 1910.1200, for guidance in establishing the acceptable environmental conditions for entry by their team members.

(5) Any atmospheric condition recognized as immediately dangerous to life or health.

Hot Work – Any work involving burning, welding, riveting, or similar fire producing operations, as well as work which produces a source of ignition, such as drilling, abrasive blasting, and space heating.

Inerting – Displacement of the atmosphere by a non-reactive gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

Isolation – A process whereby the confined space is removed from service and completely protected against the inadvertent release of material by the following: blanking off (skillet type metal blank between flanges), misaligning sections of all lines and pipes, a double block and bleed system, electrical lockout of all sources of power, and blocking or disconnecting all mechanical linkages.

Lower Explosive Limit (LEL) – The minimum concentration of a combustible gas or vapor in air (usually expressed in percent by volume at sea level), which will ignite if an ignition source (sufficient ignition energy) is present.

Oxygen Deficient Atmosphere – Any atmosphere having 19.5% or less oxygen content.

Oxygen Enriched Atmosphere – Any atmosphere having 22% or more oxygen content.

Permissible Exposure Limit (PEL) – The maximum 8-hour time weighted average of any airborne contaminant to which a team member may be exposed. At no time shall the exposure level exceed the ceiling concentration for that contaminant as listed in 29 CFR Part 1910 Subpart Z.

Purging – The method by which gases, vapors, or other airborne impurities are displaced from a confined space.

Qualified Person – A person designated by the team leader, in writing, as capable (by education and/or specialized training) of anticipating, recognizing, and evaluating team member exposure to hazardous substances or other unsafe conditions in a confined space. This person shall be capable of specifying necessary control and/or protective action to ensure worker safety.

Respirator (Approved) – A device which has met the requirements of 30 CFR Part 11 and is designed to protect the wearer from inhalation of harmful atmospheres and has been approved by the National Institute for Occupational Safety and Health, and Mine Safety and Health Administration.

Standby Person – A person trained in emergency rescue procedures assigned to remain on the outside of the confined space with no other duties assigned while confined space is occupied, and to be in communication with those working inside.

Threshold Limit Value (TLV) – A level of airborne contamination not to be exceeded as established by the American Conference of Government Industrial Hygienists (ACGIH).

Toxic Atmosphere – Any atmosphere having a toxic or disease producing contaminant exceeding the legally established permissible exposure limit or the Threshold Limit Value established by the American Conference of Governmental Industrial Hygienists.

Upper Explosive Limit (UEL) – The maximum concentration of a combustible gas or vapor in air (usually expressed in percent by volume at sea level), which will ignite if an ignition source is present.

9. Entry and Rescue. The Confined Space Classification Table on page Q-3 is based on existing or potential hazards relative to the confined space. The classification is based upon the characteristics of the confined space, oxygen level, flammability and toxicity. If any of the hazards present a situation which is immediately dangerous to life or health (IDLH), the confined space shall be designated Class A. The classification shall be determined by the most hazardous condition of entering, working in, and exiting a confined space. Class B confined space has the potential for causing injury and illness but is not immediately dangerous to life and health. A Class C entry would be one in which the hazard potential would not require any special modification of the work procedures.

The Check List of Considerations on page Q-4 delineates the minimum preparation required for each class of

confined space entry. Where specific procedures, activities or requirements are correlated with a classification: the procedure, activity or requirement is mandatory. As an example, Item 1 – Permit System (Class A, B and C) means that a permit is mandatory for Class A, B, and C confined space entry.

If the work practice involved in the confined space has the potential to increase existing hazards or generate additional ones, it shall be necessary to frequently evaluate the space to determine if a classification change is warranted.

Rescue procedures shall be specifically designed for each entry. If a confined space has an A or B Classification, there shall be a trained standby person assigned to that confined space with a fully charged, positive pressure, self-contained breathing apparatus (SCBA) at hand. Additional duties of the standby person are to maintain

CONFINED SPACE CLASSIFICATION TABLE

Parameters	Class A	Class B	Class C
Characteristics	Immediately dangerous to life – rescue procedures require the entry of more than one individual fully equipped with life support equipment – maintenance of communication requires an additional standby person stationed within the confined space.	Dangerous, but not immediately life threatening – rescue procedures require the entry of no more than one individual fully equipped with life support equipment – indirect visual or auditory communication with workers.	Potential hazard – requires no modification of work procedures – standard rescue procedures – direct communication with workers, from outside the confined space.
Oxygen	16% or less *(122 mm Hg) or greater than 25% *(190 mm Hg)	16.1% to 19.4% *(122 - 147 mm Hg) or or 21.5% to 25% (163 – 190 mm Hg)	19.5% to 21.4% *(148 to 163 mm Hg)
Flammability Characteristics	20% or greater of LEL	10% - 19% LEL	10% LEL or less
Toxicity	**IDLH	Greater than contamination level, referenced in 29 CFR Part 1910 Subpart Z – less than **IDLH	Less than contamination level referenced in 29 CFR Part 1910 Subpart Z.

*Based upon a total atmospheric pressure of 760 mm Hg (sea level)

**Immediately Dangerous to Life or Health – as referenced in NIOSH Registry of Toxic and Chemical Substances, material safety data sheets, industrial hygiene guides or other recognized authorities.

CHECK LIST OF CONSIDERATIONS FOR ENTRY,
WORKING IN AND EXITING CONFINED SPACES

ITEM	CLASS A	CLASS B	CLASS C
1. Permit	X	X	X
2. Atmospheric Testing	X	X	X
3. Monitoring	X	O	O
4. Medical Surveillance	X	X	O
5. Training of Team Members	X	X	X
6. Labeling and Posting	X	X	X
7. Preparation			
Isolate/lockout/tag	X	X	O
Purge and ventilate	X	X	O
Cleaning Processes	O	O	O
Requirements for special equipment/tools	X	X	O
8. Procedures			
Initial plan	X	X	X
Standby	X	X	O
Communications/observation	X	X	X
Rescue	X	X	X
Work	X	X	X
9. Safety Equipment and Clothing			
Head protection	O	O	O
Hearing protection	O	O	O
Hand protection	O	O	O
Foot protection	X	X	X
Body protection	O	O	O
Respiratory protection	O	O	O
Safety belts	X	X	X
Life lines, harness	X	O	O
10. Rescue Equipment	X	X	X
11. Recordkeeping/Exposure	X	X	O

X – indicates requirement.

O – indicates determination by the qualified person.

unobstructed life lines and communications to all workers within the confined space, and to summon rescue personnel if necessary. Under no circumstances will the standby person enter the confined space until he is relieved and is assured that adequate assistance is present. However, while awaiting rescue assistance, the standby person will make rescue attempts utilizing the life lines from outside the confined space. Rescue teams entering a Class A or B confined space shall be equipped with all the aforementioned safety equipment of the standby person and required life lines.

In the event of a Class C confined space rescue, a supplied-air respirator or a self-contained breathing apparatus shall be used. A person summoned or one who recognizes the need for rescue shall summon assistance and await their arrival outside the confined space. Respirators and life lines shall be donned by rescue personnel and they shall enter with necessary equipment for removal of the victim(s).

10. Permit System (Class A, B, and C). Entry into a confined space shall be by permit only. The permit is an authorization and approval in writing that specifies the location and types of work to be done, and certifies that all existing hazards have been evaluated by the qualified person, and necessary protection measures have been taken to ensure the safety of each worker. (See page Q-13 (CEORD Form 1123R, "Caution Order" Sheet).)

The team leader or a qualified person shall be responsible for securing the permit and both shall sign off when the following areas and actions have been reviewed and confirmed:

- a. Location and description of the work to be done. (Class A, B, and C)
- b. Hazards that may be encountered. (Class A, B, and C)
- c. Complete isolation checklist. (Class A, B, and C)
 - (1) Blanking and/or disconnecting.
 - (2) Electrical lockout.
 - (3) Mechanical lockout.
- d. Special clothing and equipment. (Class A and B)
 - (1) Personal protective equipment and clothing.

- (2) Safety harness and/or lines.

- (3) Tools approved for use in accordance with the Hazardous Location Classification of the National Electrical Code.

- (4) Approved electrical equipment.

- e. Atmospheric test readings. (Class A, B, and C)

- (1) Oxygen level.

- (2) Flammability and/or explosive levels.

- (3) Toxic substance levels.

- f. Atmospheric monitoring while work is being performed. (Class A on a continuous basis and Class B as determined by the Qualified Person)

- g. Team member training and complete understanding of the hazards. (Class A, B, and C)

- h. Standby person(s) as named on the permit. (Class A and B)

- i. Emergency procedures and location of first aid equipment. (Class A, B and C)

This permit shall be dated and carry an expiration time that will be valid for one shift only. The permit shall be updated for each shift with the same requirements.

The permit for a Class A or B confined space shall be posted in a conspicuous place, close to the entrance, with a copy on file in the project office. See CEORH Form 2843 on page P-14.

The training requirements of personnel entering and/or working in confined spaces shall be suitable for the nature of the hazard and the work to be performed and will therefore vary with the confined space classification.

11. Medical (Class A, B).

- a. Workers who enter a Class A or B confined space shall have a pre-placement physical examination. The physician shall be provided information such as the type of confined space the team member may be required to enter, the type of substances the team member may encounter, and a description of any protective devices or equipment he/she may be required to use. The physical examination shall include:

(1) Those team members who enter confined spaces for less than 3 weeks annually and may be required to wear a respirator:

- (a) Employment History
- (b) Medical History
- (c) Pulmonary Function Test

(2) Those team members who enter confined spaces a cumulative total of 3 weeks or more annually and may be required to wear a respirator:

- (a) Employment History
- (b) Medical History
- (c) Pulmonary Function Test
- (d) Chest X-ray
- (e) Other for Cause

b. Following completion of the examinations, the physician shall give to the employer a written statement specifying any condition or abnormality found which would increase risk to the team member's health by working in confined spaces.

c. Annual medical examinations shall be provided to team members required to work in Class A or B confined spaces.

d. First-Aid Provisions.

(1) For Class A and B entry there shall always be someone readily available in the area of the confined space who is currently trained in cardio-pulmonary resuscitation (CPR) and basic first-aid procedures.

(2) Team members shall be aware of the location of the nearest first aid equipment, and how to obtain emergency assistance and medical attention. An adequate supply of first-aid equipment shall be within easy access of the confined space.

e. Records of exposure to known health hazards shall be included in team members' medical records.

12. Training (Class A, B, and C). The team leader shall be responsible for training personnel and for the safety of the entire operation. Personnel who work in the vicinity of confined spaces shall be made aware of the hazards associated with confined spaces during orientation. Personnel who are required to work in a confined space, or in support of those working in a confined space shall have additional training in the following areas:

a. Emergency entry and exit procedures (Class A, B, and C);

b. Use of applicable respirators (Class A, B, and C);

c. First Aid (Class A, B);

d. Lockout procedures (Class A, B, and C);

e. Safety equipment use (Class A, B, and C);

f. Rescue and training drills designed to maintain proficiency shall be given initially to new team members, and thereafter, at least annually, or at lesser intervals as determined necessary by the judgment of the team leader (Class A, B, and C);

g. Permit system (Class A, B, and C); and

h. Work practices as recommended in Section 13 of this proposed regulation (Class A, B, and C).

i. External Barriers.

j. Communication procedures.

k. Training of standby person.

l. Training of authorized individual.

Training shall not be considered as complete until the team leader or other designated official, judges that the team member has attained an acceptable degree of proficiency for entering and working in confined spaces. The trainee's judgment of the adequacy of his training shall be properly considered. Refresher training shall be provided at least annually.

All training and retraining shall be certified and documented. Certification shall contain such information as the name of the person, time, date, and location of training, name of trainer, etc. ORH Form 2414 (pg. P-15) will be used to document all training. Training records shall be retained for period of employment plus 30 years.

13. Testing and Monitoring (Class A, B, and C). Entry into a confined space is prohibited until initial testing of the atmosphere has been done from the outside. Appropriate tests shall be made to ensure that the atmosphere is safe. The tests performed shall include those for oxygen content, flammability, and toxic materials. Any necessary additional tests will be selected and

performed to the satisfaction of the qualified person. Monitoring of a Class A confined space shall be done on a continuous basis. Class B and C shall be monitored as determined by the qualified person.

Entry into a confined space for any type of hot work shall be prohibited when tests indicate the concentration of flammable gases in the atmosphere is greater than 10% of the lower flammability limit (LFL). It is necessary to determine the oxygen level (by appropriate testing) prior to measuring the range of flammability to make necessary corrections in the flammability measurement. Monitoring of the atmosphere shall be performed in accordance with the permit. Equipment for continuous monitoring of gases and vapors shall be explosion-proof and equipped with an audible alarm or danger signaling device that will alert team members when a hazardous condition develops. Instruments used for testing the atmosphere in a confined space shall be selected for their functional ability to measure hazardous concentrations. Instruments shall be calibrated in accordance with the manufacturer's guidelines or manuals. Each calibration shall be recorded, filed by the employer, and available for inspection for 1 year after the last calibration date.

In any confined space classified as a Class II or Class III hazardous location according to the 1990 National Electrical Code, Article 500, Sections 6 and 7, a fire watch shall be established as part of the entry procedure. In such areas surface dust and fibers shall be removed and no hot work shall be initiated until the airborne particulate level is below 10% of the LFL for the material. When combustible dusts or ignitable fibers/flyings are present, all equipment and ventilation systems used in the confined space shall comply with Articles 502 and 503 of the National Electrical Code.

The percentage of oxygen for entry into a confined space shall be no less than 19.5% nor greater than 25% at 760 mm Hg. If tests indicate the oxygen level to be greater than 25% hot work is prohibited until ventilating techniques have reduced the oxygen level to approximately 21%. If the percentage of oxygen falls below 19.5% approved respiratory equipment shall be used in accordance with Section 12 and Insert 2.

When the contaminants in the atmosphere cannot be kept within permissible exposure levels as set down in 29 CFR Part 1910 Subpart Z, or the ACGIH TLV and Biological Exposure Indices, whichever is more stringent, then the team member shall wear an approved respirator.

14. Labeling and Posting (Class A, B, and C).

a. All entrances to any confined space shall be posted. Signs shall include but not necessarily be limited to the following information:

DANGER

CONFINED SPACE

ENTRY BY PERMIT ONLY

b. When a specific work practice is performed or specific safety equipment is necessary, the following statement shall be added, in large letters, to the warning sign:

RESPIRATOR REQUIRED
FOR ENTRY

LIFELINE REQUIRED
FOR ENTRY

HOT WORK PERMITTED
OR
NO HOT WORK

c. Emergency procedures, including phone numbers of fire departments and emergency medical services shall be posted conspicuously within the immediate area of the confined space, or at the telephone from which help would be summoned.

d. Workers unable to read labels and posted signs shall receive information regarding hazardous areas and shall be informed of the instructions printed on the signs. Where needed and appropriate, established warning symbols shall be included in warning signs.

15. Safety Equipment and Clothing (Class A, B, and C). The entry permit shall include a list of necessary protective equipment to be used in the confined space as determined by the qualified person. The team leader shall be responsible for the proper use of the safety equipment, and the inspection and maintenance procedures performed on the safety equipment. The type of protective equipment required will be determined by the qualified person.

a. Those items normally used to protect against traumatic injury include: safety glasses, hardhats, footwear, hearing protection, and protective clothing.

b. **Protective Clothing**—All team members entering a confined space shall wear full coverage work clothing as specified by the qualified person. Gloves and clothing made of impervious rubber or similar material are to be worn to protect against toxic or irritating materials. If the hazards of heat or cold stress exist in the confined space, clothing which will provide protection from over-exposure to these hazards shall be worn. Other body protection required in specific operations such as welding (flame proofed), riveting (heat resistant) and abrasive blasting (abrasion resistant) shall be provided to ensure worker safety.

c. **Respiratory Protection.** The requirement for respiratory protection shall be determined by the qualified person based upon conditions and test results of the confined space, and the work activity to be performed. Halfmask respirators are not recommended for use in any atmosphere greater than $10 \times \text{PEL}$ because of the probability of accidentally breaking the facepiece to face seal due to the work condition in a confined space. Also, gas masks designed for the same respiratory protection may be substituted for chemical cartridge respirators in Insert 2, but they are more cumbersome and restrictive to movement. The minimum service time of self-contained breathing apparatus shall be calculated on the entry time, plus the maximum work period, plus twice the estimated escape time for safety margin.

The respirators used shall be NIOSH and MSHA approved devices and shall be fitted and maintained in accordance with EM 385-1-1 and Appendix O of this manual. Self-contained breathing apparatus, with audible alarms and all gas masks, approved by the Bureau of Mines may be used until further notice.

d. **Hand Protection** — If hands are exposed to rough surfaces or sharp edges, the degree of protection can range from canvas to metal mesh gloves, depending on the material handled. Gloves made of impervious rubber or similar material are to be worn to protect against toxic or irritating materials. Heat protective gloves are required when team members handle objects with temperatures greater than 60°C (140°F). Where a current flow through the body of more than 5 milliamperes may result from contact with energized electrical equipment, team members shall wear insulating gloves that have been visually inspected and air tested before each use. Above 5,000 volts, rubber gloves in accordance with EM 385-1-1, paragraph 07.A.22. shall be worn.

e. Additional safety equipment that is necessary to protect the worker in the environment of a confined space:

a safety belt with "D" rings for attaching a life line shall be worn at all times; the combination of a body harness with life line shall be used when a team member is required to enter to complete the gas analysis; when a team member is working in an area where entry for purposes of rescue would be contraindicated (special limitations or fire hazard); when any failure of ventilation would allow the build-up of toxic or explosive gases within the time necessary to evacuate the area, or when the atmosphere is immediately dangerous to life and health. Safety belts may be used as the primary means of suspension for the life line only when rescue may be made by keeping the disabled body in a position that will maintain easy passage through exit openings. If the exit opening is less than 18 inches (45 cm) in diameter, then a wrist-type harness shall be used. When it is determined by the qualified person that none of the special hazards associated with confined spaces pose an immediate threat to life, as in a Class C entry, then life lines shall be readily available but not used during entry and work procedures.

Other protective measures shall include: life jackets worn if the workers are exposed to falls into liquid over 4 feet (1.2 m) in depth; and insulated floor mats when hot work requires use of electrical energy.

Such added features as a tripod with block and tackle for safety lines and communication equipment should be considered when the entry plan is formulated. The team leader shall be responsible for maintenance of the barricade system.

16. Work Practices (Class A, B, and C). Before entering a confined space, team members shall review the specific guidelines appropriate for safe entry and emergency exit. These guidelines shall be compiled by the team leader and be definitive on all the possible hazards. Areas covered by such guidelines shall follow this recommended standard.

a. **Purging and Ventilating (Class A, B).** Environmental control within a confined space is accomplished by purging and ventilating. The method used will be determined by the potential hazards that arise due to the substance stored or produced, suspected contaminants, the work to be performed, and the design of the confined space. When ventilating and/or purging operations are to be performed, the blower controls shall be at a safe distance from the confined space. In a Class A entry, an audible warning device shall be installed in all equipment to signal when there is a ventilation failure. When a ventilation system is operational, air flow measurements shall be made before each workshift to

ensure that a safe environmental level is maintained. Initial testing of the atmosphere shall be performed from outside the confined space before ventilation begins to determine what precautions are necessary in purging and ventilating. Testing of more remote regions within the confined space may be performed once the immediate area within the confined space has been made safe. Exhaust systems shall be designed to protect workers in the surrounding area from contaminated air. If flammable concentrations are present all electrical equipment shall comply with the requirements of The National Electrical Code, (NEC) article 250 for hazardous locations and the bonding requirements. Where continuous ventilation is not a part of the operating procedure, the atmosphere shall be tested until continuous acceptable levels of oxygen and contaminants are maintained for three tests at 5-minute intervals. Care shall be taken to prevent recirculation of contaminated air and interaction of airborne contaminants.

Continuous general ventilation shall be maintained where toxic atmospheres are produced as part of a work procedure, such as welding or painting, or where a toxic atmosphere may develop due to the nature of the confined space, as in the case of desorption from walls, or evaporation of residual chemicals. General ventilation is an effective procedure for distributing contaminants from a local generation point throughout the work space to obtain maximum dilution. However, special precautions shall be taken if the ventilating system partially blocks the exit opening. These precautions include a method for providing respirable air to each team member for the time necessary for exit, and a method of maintaining communications.

Local exhaust ventilation shall be provided when general ventilation is not effective due to restrictions in the confined space or when high concentrations of contaminants occur in the breathing zone of the team member. Local high concentrations of contaminants may occur during work activities such as welding, painting, and chemical cleaning. The team member shall not be exposed to concentrations of contaminants in excess of those specified in 29 CFR Part 1910 Subpart Z. Therefore, respiratory protection, as recommended in Section 12 may be needed in addition to engineering controls. The use of respiratory protection will be determined by the qualified person. However when fumes may be generated that contain highly toxic or other airborne metal contaminants, the provisions of 29 CFR 1910.252 shall be observed. When freely moving exhaust hoods are used to provide control of fumes generated during welding, such hoods shall maintain a velocity of 100 feet per minute in the zone of the welding. The effective force of freely moving exhaust hoods is decreased by approximately 90% at a distance of one duct

diameter from the plane of the exhaust opening. Therefore, to obtain maximum effectiveness the welder shall reposition the exhaust hood as he changes welding locations to keep the hood in close proximity to the fume source.

Special precautions shall be taken when outgassing or vaporization of toxic and/or flammable substances are likely. If the vapor-generating rate can be determined, the exhaust rate required can be calculated to dilute the atmosphere below the PEL and/or 10% of the LEL, whichever is the lower. This shall be the lowest acceptable ventilation rate. If the area of concern is relatively small, diffusion of the contaminants may be controlled by enclosure with a relatively low volume exhaust for control, or by exhaust hoods located as close as possible to the area of vaporization or outgassing. If the area to be ventilated is too extensive to be controlled by local exhaust, then general ventilation procedures shall be used to control the contaminant level. When the problem of outgassing is due to the application of protective coatings or paint, ventilation shall be continued until the build-up of a flammable and/or toxic atmosphere is no longer possible.

There are three components necessary for combustion: fuel, oxygen, and a source of ignition. If work with fire becomes necessary in a confined space and the source of fuel cannot be controlled, then the atmosphere shall be inerted. This is a highly hazardous work situation, and continuous monitoring of the inert make-up ventilation is mandatory. Monitoring shall include flow measurement as well as gas analysis. The inerting operation shall be continuously monitored and supervised by the qualified person. Since every confined space will have its own infiltration rate, inerting shall continue for the entire duration of the work at a rate that will prevent air from entering the confined space.

b. Isolation/Lockout/Tagging (Class A, B). The isolation procedures shall be specific for each type of confined space. Safety equipment required during this procedure shall be designated by the qualified person and be dependent upon the potential hazards involved. A Class A or B confined space shall be completely isolated from all other systems by physical disconnection, double block and bleed, or blanking off all lines. In continuous systems, where complete isolation is not possible, such as sewers or utility tunnels, specific written safety procedures that are approved and enforced by the employer shall be used. Blanks used to seal off lines shall be capable of withstanding the maximum working pressure or load of the line (with a minimum safety factor of 4) and be provided with a gasket on the pressure side to ensure a leakproof seal. Shutoff valves serving the confined space,

shall be locked in the closed position and tagged for identification. In addition to blanking, pumps and compressors serving these lines entering the confined space shall be locked out to prevent accidental activation.

All blanks for that specific confined space shall be recorded on the entry permit and recorded in the project log book, which shall be available for inspection.

If a drain line is located within the confined space, provision shall be made when necessary to tag it and leave it open. This shall also be recorded in the isolation section of the entry permit.

Additional procedures, which are necessary when the confined space is of a double wall type construction, e.g., water jacketed or similar type, shall be determined by the qualified person and noted in the isolation section of the entry permit.

Electrical isolation of the confined space to prevent accidental activation of moving parts that would be hazardous to the team member is achieved by locking circuit breakers and/or disconnects in the open (off) position with a key-type padlock. The only key is to remain with the team member working inside the confined space. If more than one person is inside the confined space, each team member shall place his own lock on the circuit breaker. In addition to the lockout system, there must be an accompanying tag that identifies the operation and prohibits use.

Mechanical isolation of moving parts can be achieved by disconnecting linkages, or removing drive belts or chains. Equipment with moving mechanical parts shall also be blocked in such a manner that there can be no accidental rotation. (See Appendix R for further details.)

c. Cleaning (Class A, B, and C). Procedures and processes used to clean the inside of a confined space shall be reviewed and authorized by the qualified person. The method to be prescribed shall be dependent upon the product in the space. If the confined space contains a flammable atmosphere above the upper explosive limit, it shall be purged with an inert gas to remove the flammable substance before ventilating with air. Initial cleaning shall be done from outside the tank if at all possible.

Special procedures should be adopted to handle the hazards created by the cleaning process itself. For example: if the tank is steamed, (1) it shall be allowed to cool prior to entry; (2) ventilation shall be maintained during neutralization procedures to prevent build-up of toxic

materials; (3) steaming shall not be used as a cleaning method when the product stored was a liquid with an autoignition temperature 120% or less of the steam temperature, and (4) the pipe or nozzle of the steam hose shall be bonded to the tank to decrease the generation of static electricity that could accumulate in tanks during steaming procedures. These and other hazards and controls shall be evaluated by the qualified person.

d. Equipment & Tools (Class A, B, & C). Equipment and tools to be used in a confined space shall be carefully inspected and shall meet the following requirements:

(1) Hand tools shall be kept clean and in good repair.

(2) Portable electric tools, equipment, and lighting shall be approved in accordance with EM 385-1-1 and be equipped with a ground fault circuit interrupter that meets the requirements of EM 385-1-1. All grounds shall be checked before electrical equipment is used in a confined space.

(3) All electrical cords, tools, and equipment shall be of heavy duty type with heavy duty insulation and inspected for visually detectable defects before use in a confined space.

(4) Air driven power tools shall be used when flammable liquids are present. The use of air driven power tools will reduce the risk of explosion, not eliminate it. Explosions can arise by tools overheating (drilling), sparks produced by striking (percussion), grinding or discharge of accumulated electrostatic charges developed from the flow of compressed air.

(5) Lighting used in Class A and B confined spaces shall be of explosion proof design and equipped with guards. Only equipment listed by the Underwriters Laboratories for use in Division 1, atmospheres of the appropriate class and group, or approved by U.S. Bureau of Mines or Mining Enforcement and Safety Administration or Mine Safety and Health Administration, or the U.S. Coast Guard shall be used. Lighting shall not be hung by electric cords, unless specifically designed for that purpose. The illumination of the work area shall be sufficient to provide for safe work conditions. Under no circumstances will matches or open flames be used in a confined space for illumination.

(6) Cylinders of compressed gases shall never be taken into a confined space, and shall be turned off at the cylinder valve when not in use. Exempt from this rule

are cylinders that are part of self-contained breathing apparatus of resuscitation equipment.

(7) Ladders shall be adequately secured, or of a permanent type which provide the same degree of safety.

(8) Scaffolding and staging shall be properly designed to carry maximum expected load (safety factor of 4) and be equipped with traction type planking.

(9) Electrical lines, junctions and appurtenances will be in accordance with National Electrical Code, National Fire Code, and EM 385-1-1.

(10) Only hose lines and components designed specially for the compressed gas and working pressure shall be used, and such systems shall have a pressure relief valve outside the confined space.

(11) All equipment that may be used in a flammable atmosphere shall be approved as explosion proof or intrinsically safe for the atmosphere involved by a

recognized testing laboratory such as the U.S. Bureau of Mines, MESA, or MSHA for methane and by the Underwriters Laboratories or by Factory Mutual for all cases.

e. Recordkeeping (Class A, B). The team leader shall maintain a written record of training including safety drills, inspections, tests, and maintenance. The records shall be retained for the duration of employment plus 30 years.

Where atmospheric testing indicates the presence of a toxic substance, records shall be maintained for the duration of employment plus 30 years. These records shall include the dates and times of measurements, duties and location of the team members within the confined space, sampling and analytical methods used, number, duration, and results of the samples taken, PEL concentrations estimated from these samples, type of personal protective equipment used, if any, and team members' names.

Class C records shall be retained for a minimum of 5 years.

RESPIRATORY SELECTION GUIDE

Hazard	Concentration* Less Than or Equal To	Respirator**
Particulate	5 x PEL	Single use respirator.***
Particulate	10 x PEL	Any dust respirator.***
Particulate	50 x PEL	Full face piece respirator with high efficiency filter(s) or self-contained breathing apparatus with full facepiece operated in the demand mode.
Particulate	2000 x PEL	Supplied-air respirator with full facepiece operated in any positive pressure mode.
Particulate	Greater than 2000 x PEL	Self-contained breathing apparatus with full facepiece operated in the pressure demand mode or a supplied-air respirator with full facepiece operated in any positive pressure mode with an auxiliary self-contained breathing apparatus.
Known gas or vapor contaminant****	50 x PEL	Chemical cartridge respirator with full facepiece and cartridges approved for the specific contaminant(s) or a full facepiece self-contained breathing apparatus operated in the demand mode.
Known gas or vapor contaminant***	2000 x PEL	Supplied-air respirator with full facepiece operated in any positive pressure mode.
	greater than 2000 x PEL	Self-contained breathing apparatus with full facepiece operated in the pressure-demand mode or combination supplied-air respirator with full facepiece operated in any positive pressure mode with an auxiliary self-contained breathing apparatus.
Combination of particulates and gases or vapors****	50 x PEL	A full facepiece combination respirator approved for dusts and mists and the specific contaminant(s) (gases or vapors).
	1000 x PEL	Powered air-purifying full facepiece combination respirator with high efficiency filter and chemical cartridge approved for the specific gas or vapor.
	2000 x PEL	Supplied-air respirator with full facepiece operated in any positive pressure mode.
	greater than 2000 x PEL	Self-contained breathing apparatus with full facepiece operated in the pressure-demand mode or combination supplied-air respirator with full facepiece operated in any positive pressure mode with an auxiliary self-contained breathing apparatus.

RESPIRATORY SELECTION GUIDE (Cont'd)

Hazard	Concentration* Less Than or Equal To	Respirator**
Unknown contaminant	undetermined	Self-contained breathing apparatus with full facepiece operated in the positive pressure mode or a supplied-air respirator with full facepiece operated in any positive pressure mode with an auxiliary self-contained breathing apparatus.
Inert and other atmospheres where the oxygen level is below 17%		Self-contained breathing apparatus with full facepiece operated in the pressure demand mode or a combination supplied air respirator with full facepiece operated in any positive pressure mode with an auxiliary self-contained breathing apparatus.
Emergency entry	unknown	Self-contained breathing apparatus with full facepiece operated in the pressure demand mode or a combination supplied-air respirator with full facepiece operated in any positive pressure mode with an auxiliary self-contained breathing apparatus.

* If the concentration forms a flammable atmosphere only the self-contained breathing apparatus with full facepiece operated in the pressure-demand mode may be used.

** Any respirator recommended for a higher concentration may be used at a lower concentration.

*** These respirators may not be used if the toxic material is carcinogenic.

**** If the concentration forms an atmosphere which is immediately dangerous to life then only the self-contained breathing apparatus operated in the pressure mode or the combination supplied-air respirator with full facepiece operated in any positive mode with an auxiliary self-contained breathing apparatus may be used.

CONFINED SPACE ENTRY PERMIT

PERMIT NUMBER: _____		TIME ISSUED: _____		DATE: _____	
PROJECT: _____		EXPIRATION DATE/TIME: _____			
LOCATION AND DESCRIPTION OF CONFINED SPACE: _____ _____ _____					
SUPERVISOR: _____		TIME ISSUED: _____		DATE: _____	
WORKERS ASSIGNED: _____					
ATMOSPHERIC TEST RESULTS (Valid for one 8-hour shift only)					
YES/NO	TYPE	PRE-ENTRY READING	PRE-ENTRY TRAINING CONDUCTED: YES/NO		
_____	Oxygen (19.5%-22.0% acceptable)	_____ %	SIGNATURE OF PERSON WHO PERFORMED TEST: _____ INSTRUMENT USED: _____		
_____	Combustible Gas (<10% LEL *acceptable)	_____ % LEL			
_____	Hydrogen Sulfide (10 PPM **acceptable)	_____ % PPM			
_____	CO (35 PPM acceptable)	_____ % PPM			
_____	Other _____	_____			
* LEL - Lower Explosive Limit ** PPM - Parts Per Million					
SAMPLE					
BLANKING OR DISCONNECTING: _____ YES/NO MECHANICAL: YES/NO OTHER MEANS OF ENTRY: _____					
SAFETY PRECAUTIONS REQUIRED					
YES/NO	Standby Observer(s)	YES/NO	Rescue Equipment		
_____	Clear of Hazardous Material	_____	Lifelines/Harness		
_____	Ventilation	_____	Electrical Power Disconnected		
_____	Continuous Monitoring	_____	Special Lighting		
_____	Spark-Proof Equip/Tools	_____	Communication Equipment		
_____	Barriers	_____	Information Signs		
		_____	Other _____		
PROTECTIVE EQUIPMENT					
(Circle one)		Additional Equipment: _____			
Level A, B, C, D		_____			
EMERGENCY PLANNING (Circle one)					
First Aid Equipment: YES/NO		Emergency Procedures Established: YES/NO		Ventilation: YES/NO	
Hot Work Permit: YES/NO		Standby Person(s) for Class A & B Entry: _____			

Outside Contractors Informed of Hazards: YES/NO		Anticipated Hazards: _____			

Signature of Supervisor Authorizing all above Conditions Satisfied: _____ Date: _____					

ORH FORM 2414
1 Jun 81
(Previous Edition Obsolete)

Appendix Q
SAFE CLEARANCE PROCEDURE PROGRAM
THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

1. For U.S. Army Corps of Engineers, Huntington District.

Project or Section: _____

2. Responsible official for administration of program.

Location: _____

Name: _____

Title: _____ Date: _____

3. Team members designated to issue clearances.

Issuing Persons: _____

Type of clearance authorized to issue:

Authorized Persons: _____

Type of clearance each person may request and be issued:

4. List of equipment that may be removed or returned to service without a clearance:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

5. **Purpose.** The purpose of this program is to establish requirements for safe clearance procedures to control hazardous energy during service and maintenance of machines and equipment.

6. **References.** OSHA 29 CFR, Part 1910.147
OSHA 29 CFR, Part 1910.333 (b)
EM 385-1-1 (Safe Clearance
Procedure, Electrical,
Mechanical, Pressure,
Hazardous Equipment)
ER 385-1-31 (Safety and Health
Requirements Manual)
National Electric Code
National Electric Safety Code
EP 310-1-6 (Graphic Standards
Manual)

7. **Application.** This program is applicable to all Huntington District elements and contractors with responsibility for service and maintenance of equipment or machinery.

8. **Policy.**

a. Personnel, equipment, or resources shall not be considered protected until a safe clearance procedure has been completed. This requires all potentially hazardous or stored energy to be locked out by switching, valving, bleeding, blocking, or otherwise rendered safe to prevent energization or release of stored energy that could cause injury or property damage. No person or group of persons shall be authorized to work on any equipment or enter a restricted area subject to safe clearance procedures until a clearance has been issued by the Authorized Person or Team Leader in charge of the work and all procedures and special instructions have been completed.

b. Each facility within the Huntington District shall have a written hazardous energy control program defining the facility's hazardous energy control requirements. The program will incorporate control procedures, define personnel training requirements, and maintain a list of responsible officials with issuing and authorizing responsibilities.

c. Training shall be provided to ensure that the purpose and function of the hazardous energy control

program and hazardous energy control procedures are understood by team members and that team members possess the knowledge and skills required for the safe application, usage, and removal of energy controls.

d. Periodic inspections of hazardous energy control procedures shall be conducted, documented, and certified.

e. Lockout and tagout shall be performed only by authorized personnel. All affected personnel shall be notified of the application and removal of lockout and tagout devices.

f. Systems with energy isolating devices which are capable of being locked out shall utilize locking devices to control hazardous energy unless the responsible official has demonstrated that (1) the use of locking devices would entail burdens that exceed any advantage to the use of lockout over the use of tagout devices, (2) the use of tagout devices will provide full personnel protection as defined in Exhibit A, and (3) all affected personnel are informed that tagout is being used in lieu of lockout.

g. If an energy isolating device is not capable of being locked out, the hazardous energy control procedures shall utilize tagout.

h. When a tagout device is used in lieu of a lockout device, the issuing individual shall be provided documented substantiation of compliance with the following requirements prior to approving the use of tagout in lieu of lockout:

(1) All tagout requirements of this regulation and of the hazardous energy control procedures are complied with.

(2) The tagout device shall be attached to the same location, if possible, that the lockout device would have been attached; if this is not possible then the tag shall be attached as close as safely possible to the device and in a position that will be immediately obvious to anyone attempting to operate the device.

(3) Additional means (e.g., placement of the tag in a manner which inhibits operation of the energy isolating device, removal of an isolating circuit mechanism, blocking of a control switch, opening of an extra disconnecting device, removal of a valve handle to reduce the likelihood of inadvertent energization, etc.) shall be employed to provide a level of protection equivalent to that provided by a lockout device.

j. Whenever major replacement, repair, renovation, modification of machinery, equipment, or transmission line is performed or new machinery, equipment, or transmission line is installed, energy isolating devices designed to accept a lockout device shall be installed.

k. Contractors performing work at Corps-operated facilities shall comply with the hazardous energy control procedures of the facility and the hazardous energy control requirements of EM 385-1-1.

9. **Definitions.** Contained in Exhibit A on page Q-8.

10. Responsibilities.

a. Responsible Officials shall:

(1) Formulate and implement a written safe clearance program applicable to the particular facility or project under his/her control. This program shall be reviewed and updated at least annually or whenever a change in team occurs. Whenever applicable the written documentation required in the following paragraphs shall be included.

(2) Prepare and maintain a list of authorized persons at the project clearly stating the type of clearance each person may be issued. The list will be made available to the issuing authority.

(3) Designate in writing the issuing authority and the clearances he/she may issue.

(4) Maintain a list of equipment that may be removed or returned to service without a clearance.

(5) Assure that required manuals and drawings required to issue and receive clearances, are available to all personnel involved.

(6) Direct preparation of standard operating procedures and instructions and provide annual training on proper clearance procedures for all individuals concerned.

(7) Assure that appropriate disciplinary action is taken subsequent to violations of safe clearance procedures.

b. The issuing personnel shall:

(1) Be a person with jurisdiction over the area or project, such as the project manager or lockmaster at a

navigation or flood control project, maintenance leader, maintenance mechanic, or a person having operational control of areas or equipment to be placed under safe clearance procedures.

(2) Review requests for safe clearances and prepare the Safe Clearance Order Sheet (ENG Form 1927) and clearance card (CEORD Form 1121R) for each clearance requested and provide the authorized person a copy of the clearance order sheet as necessary for procedure verification.

(3) Make necessary arrangements for interruption of services.

(4) Coordinate with appropriate agencies or workforce to assure isolation of equipment and be responsible for positioning of all lockout devices as specifically listed on the clearance order and assure they are tagged accordingly.

(5) Assure the equipment under clearance is safe for work to be performed and maintain cognizance of the equipment condition and status during the clearance.

(6) Upon completion of the work, inspect the equipment and assure it is ready for service and the authorized person has requested the appropriate release of the clearance. In case of remote facilities, a qualified person may conduct the inspection under the direction of the issuing authority.

c. The authorized person shall:

(1) Request clearances in sufficient time for the issuing authority to make necessary arrangements and accomplish the necessary isolation. The request may be verbal or written, but in any event it must clearly outline the work to be done and the equipment to be cleared.

(2) Check the clearance order sheet to assure adequacy of protection to be provided for the work being performed. No one shall be required to perform any work or enter a restricted area which he/she deems to be unsafe.

(3) Ascertain that all energy lockout devices are in the correct position and properly tagged, assure the clearance has been properly issued, all physical barriers and protective grounds are installed, and through appropriate tests verify isolation.

(4) Assume responsibility for the facility or equipment covered by the clearance and keep the issuing

authority informed of the status of the work. Prior to the release of the clearance assure that all equipment is ready for service.

11. Authority to Obtain Clearances. The issuing official shall issue clearances only to those team members approved and whose names appear on the list of individuals authorized to receive clearances.

12. Requests for Clearances. All requests for clearances shall be specific and submitted verbally or in writing depending on the extent of the work to be performed. To prevent misunderstanding, the issuing authority shall repeat the request for clearance to the authorized person, the equipment to be cleared, time and extent of the clearance, estimated time for completion of the operation, and return of the facility back in service. The time required to vacate the clearance and return the equipment to service in case of emergency shall be thoroughly discussed. Cooperation and exchange of information is mandatory to assure a complete understanding of the extent and limitations of the clearance. Requests for clearances shall be submitted sufficiently in advance of the work schedule to complete all arrangements and operations prior to the proposed clearance time.

13. Hazardous Energy Control Program and Procedures. Each project or facility shall maintain:

a. A written local safe clearance program applicable to the specific facility. The program shall be supplemental to and within the guidelines of this regulation, applicable sections of 29 CFR 1910.147 and 29 CFR 1910.333(b), EM 385-1-1, and ER 385-1-31. The program shall be reviewed and updated at least annually.

b. Procedures are required for entrance into restricted areas. Each permit shall contain information relative to required protective grounds and test methods to verify isolation. All procedures shall be serialized and filed with the issuing authority. The procedures shall define the hazardous energy control requirements of the facility, incorporate hazardous energy control procedures, list the responsible official and issuing and authorized personnel and their responsibilities, and define team member training requirements.

c. It is recommended that routine safe clearances—defined as those using hazardous energy control procedures which have been standardized for a particular system—be serialized and maintained with both the issuing and the authorized personnel in order to facilitate their request, review, and approval. Each serialized safe clearance

procedure shall be identified by a unique serialization code which identifies the facility and the procedure.

14. Training.

a. Training shall be provided to ensure that the purpose and procedures of the hazardous energy control program are understood by all team members and that they possess the knowledge and skills required for the safe application, usage, and removal of energy controls.

(1) Each authorized individual shall receive training in the recognition of hazardous energy sources, the type and magnitude of energy available in the workplace, and the methods and means for energy isolation and control.

(2) Each affected person shall be instructed in the purpose and use of the energy control procedures.

(3) All incidental team members shall be instructed about the procedures and about prohibitions relating to restarting or re-energizing systems which are locked or tagged out.

b. When tagout systems are used, team members shall also be trained in the limitations of tags.

c. All team members shall periodically be retrained in safe clearance procedures. Retraining shall be provided:

(1) For all authorized and affected personnel whenever there is a change in their job assignments, a change in systems or processes that present a new energy control hazard, or a change in energy control procedures.

(2) Whenever a periodic inspection reveals, or there is reason to suspect the presence of, deviations from or inadequacies in the person's knowledge or use of energy control procedures.

d. The responsible official shall certify and document all training and retraining. Certification shall contain such information as the name of the team member, the time, date, and location of training, the name of the trainer, etc. Exhibit F, ORH Form 2414 (Training Record) and DD Form 1556 (Request, Authorization, Agreement, Certification of Training and Reimbursement), will be used to document all training.

15. The Issue of Clearances.

a. All clearances should be issued in person where practical. When personal contact is impossible between

the authorized person and issuing authority, other positive means of communications may be used.

b. All clearances shall be issued under the direction of the issuing authority designated by the responsible official as specified. The issuing authority shall check all provisions of the clearance to verify that they are complete and correct. The clearance holder must understand the limits of the clearance that exist in connection with the work to be performed.

16. Equipment Requiring a Clearance. Equipment upon which work is to be performed shall be covered by a clearance if: Unauthorized removal of lockout/tagout devices or return to service could result in injury, property damage, loss of protection, or endangerment of natural resources, and when work is to be performed in a restricted area.

17. Equipment Not Requiring a Clearance.

a. At the option of the responsible official, certain equipment as designated may be operated or removed from service without a clearance. The equipment must not be in the mainstream so as not to affect the facility operation or endanger natural resources and shall be limited to one shift, otherwise a clearance is necessary.

b. When this option is exercised, the responsible official shall include all appropriate measures in the local safe clearance program to provide adequate protection for personnel involved. The responsible official shall establish a list of all equipment under his/her jurisdiction which may be operated, and taken out of service, inspected or repaired by qualified and designated team members without a clearance.

18. Clearance on Tie Lines and Supply Lines from Outside Utilities. Clearance on tie lines and supply lines to and from outside utilities shall be handled between the issuing authority and the agency concerned with the lines.

19. Clearing Equipment.

a. **Attended Installations.** The issuing authority at attended installations shall be responsible for clearing and tagging all equipment under his/her jurisdiction. The authorized person requesting the clearance shall verify the switching and tagging is correct.

b. **Instructions.** Clearance instructions which are a part of the standard operating procedures must be followed in the exact order as given.

c. **Verification of Isolation.** The authorized person shall verify by appropriate testing that the work area is isolated and free from potentially harmful sources of energy or hazardous materials.

20. Lockout and Tagout Devices.

a. Lockout and tagout devices shall:

(1) Be capable of withstanding the environment to which they are exposed for the maximum period of time the exposure is expected.

(2) Be standardized (within every facility) in the following aspects: color, shape, and size.

(3) Indicate the identity of the team member applying the devices.

b. Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques (such as with the use of bolt cutters).

c. Tagout devices shall:

(1) Be standardized (within every facility) in the following aspects: color, shape, and size.

(2) Be constructed and printed so that exposure to weather conditions, wet or damp locations, or corrosive environments will not cause the tag to deteriorate or the message to become illegible.

(3) Be attached by means which are: non-reusable; substantial enough to prevent inadvertent or accidental removal; attachable by hand; self-locking; non-releasable, with a minimum unlocking strength of no less than 50 pounds; and having the basic characteristics of being at least equivalent to a one-piece, all-environment-tolerant nylon cable tie.

(4) Warn against the hazardous conditions if the system is energized and include a legend such as DO NOT START, DO NOT OPEN, DO NOT CLOSE, DO NOT ENERGIZE, DO NOT OPERATE, etc.

21. Requirements for applying lockout and tagout devices.

a. The system shall be turned off or shut down in accordance with the hazardous energy control procedure specified in ENG Form 1927-R (Safe Clearance Request Form). An orderly shutdown shall be utilized to avoid any

additional or increased hazards to team members as a result of system de-energization.

b. All energy isolating devices needed to control energy to or within the system shall be physically located and positioned in such a manner as to isolate all energy sources at all potential energization points.

c. Lockout or tagout devices shall be affixed to each energy isolating device by authorized personnel.

(1) Lockout devices shall be affixed to each energy isolating device by authorized personnel in a manner that will maintain the energy isolating device in the safe position.

(2) Tagout devices shall be affixed in such a manner as will clearly indicate that the operation or movement of energy isolating devices from the safe position is prohibited.

d. Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, or otherwise rendered safe. (The National Electrical Safety Code should be used as a guide in grounding requirements and procedures.)

(1) Protective grounds shall be identified with safe clearance tags.

(2) The authorized individual is responsible for placing, tagging and removing or moving protective grounds in accordance with the requirements specified in the hazardous energy control procedures submitted with the safe clearance request.

e. When there is a possibility of re-accumulation of stored energy to a hazardous level, verification of isolation shall be continued until the energy control procedure is complete.

f. The authorized individual shall be responsible for the placement of all required physical barriers. In areas not under strict control of team members involved with the safe clearance, or areas with public access, padlocks or other positive controls shall be installed on the isolation devices along with the appropriate tags: this tagging procedure will be specified in the request for safe clearance and will be in compliance with tagout requirements.

g. Any system operated by a remotely controlled source will be completely isolated such that it cannot be

operated by that or any other source. Computer software, or any other type of programming, will not be used to create isolation points.

h. Prior to starting work on systems which have been locked out or tagged out, the authorized individual shall verify that isolation and de-energization of the system have successfully been accomplished.

i. When tagout devices are used, team members shall be instructed in the following requirements and limitations of tags:

(1) Tags must be legible and understood by all authorized, affected, and incidental personnel.

(2) Tags and their means of attachment must be made of materials which will withstand the environments encountered in the workplace.

(3) Tags shall be securely attached to energy isolating devices so that they cannot become inadvertently or accidentally detached during use.

(4) Tags shall not be removed without authorization of the authorized individual and shall never be bypassed, ignored, or otherwise defeated.

(5) Tags are essentially warning devices affixed to energy isolating devices and do not provide the physical protection that is provided by a lock; tags may evoke a false sense of security.

22. Group Lockout and Tagout.

When service or maintenance activities are performed by a crew, craft, or other team, procedures shall be utilized that afford the same level of protection as provided by implementing a personal lockout or tagout device.

a. The authorized individual shall have the primary responsibility for a set number of team members working under the protection of a group lockout or tagout device.

b. Each individual on a team, or craft person working under a clearance shall affix a personal lockout or tagout device according to instructions contained in Section 21 above.

c. To assure continuity of protection under the clearance, the job associated lockout or tagout control shall be the responsibility of the authorized individual to whom the clearance was issued. The authorized individual

shall ascertain the exposure status of individual team members and craft person(s) with regard to the lockout or tagout of the system.

d. When work is completed and the release is authorized, individual team members or craft persons shall remove their lockout or tagout devices first. The holder of the clearance shall remove his device(s) last returning the system to service as authorized by the issuing individual to complete the release of the clearance.

23. Requirements for the Removal of Lockout or Tagout Devices.

a. Before lockout or tagout devices are removed and energy is restored to the system, the following actions shall be taken:

(1) The work area shall be inspected to ensure that non-essential items have been removed from the system and the system components are operationally intact and that all team members have been safely positioned or removed from the area.

(2) Affected team members shall be notified that the lockout or tagout devices have been removed.

b. With the exception of the following conditions, each lockout or tagout device shall be removed from each energy isolating device by the authorized individual who applied the device. When this individual is not available to remove it, the device may be removed under the direction of the issuing individual provided that the following procedures and training for such removal have been developed, documented, and incorporated in the energy control program.

(1) Verification by the issuing individual that the authorized individual who applied the device is not at the facility.

(2) The issuing individual makes all reasonable efforts to contact the authorized individual to inform him that the lockout or tagout device has been removed.

(3) The authorized individual is informed that the lockout or tagout device has been removed prior to resuming work at the facility.

(4) The issuing individual advises the team member assuming the responsibility of the scope of the safe clearance, the work already performed, and the work to be performed.

(5) The issuing individual issues a new safe clearance and cancels the original safe clearance.

24. Operation of Equipment During a Clearance.

a. Where it is necessary to operate equipment under a clearance a standard operating practice shall be included in the local clearance program. Operations under a clearance shall be in accordance with the standard practice, subject to the order of the clearance holder, and coordinated with the issuing authority. If more than one clearance or overlapping clearances are issued, all responsible parties shall coordinate the operations to assure the safety of all team members.

b. All operations of equipment at attended installation shall be carried out by the operator in charge, unless permission is expressly granted to others to perform individual operations. Operations at unattended installations shall be carried out by the person authorized to perform the clearance and tagging or by the clearance holder. Operation of equipment directly under the control of an operator shall be operated only by the operator on duty.

c. All operations during a clearance must be scheduled in advance with the issuing authority. In cases where it is impossible or impractical to schedule in advance with the issuing authority, details of the operations shall be recorded and notification made as soon as possible upon completion of the work.

25. Violations of Safe Clearance Procedures. Safe clearance procedures are primarily for the safety and protection of team members, equipment, and natural resources. Therefore, it is important that all instructions and procedures are followed and carefully complied with. Team leaders must document all violations and promptly make a full report of the violations to the responsible official. Violators shall be subject to appropriate disciplinary action.

26. Clearance Records.

a. **Numbering.** Clearances shall be numbered consecutively.

b. **Logging.** Clearances will be entered into the project log book when issued and when released. Red ink or other distinctive means will be used to call attention to all clearance entries. Information covering items and tags to be provided will be entered on ENG Form 1927 as prescribed. All log book entries shall contain the following data for issuing:

- (1) Clearance Number (consecutive number).
- (2) Purpose.
- (3) Time; hour, minutes, listed in military time.
- (4) Date; day of month, month, year.
- (5) Issued to:
- (6) Authorized by:

For releasing a clearance the following data will be logged:

- (1) Clearance Number.
- (2) Issue Date:
- (3) Time; hour, minutes, listed in military time.
- (4) Date; day of month, month, year.
- (5) Released by:

When releasing a clearance, the word "Released" shall be written or stamped across the corresponding log entry of the "clearance" issued. At projects operating on round-the-clock shifts, the operator or other responsible team member shall, at the beginning of his/her shift, log, preferably in red ink, the number of each outstanding equipment clearance under his/her jurisdiction.

c. **Clearance Order Sheets.** Requests for clearances, clearance releases and all other pertinent data in connection with clearances shall be entered on ENG Form 1927. When standard detailed procedures are applicable to clearance, the project standard procedure number and title can be entered on the clearance order sheet in lieu of the detailed information. The team member receiving the clearance shall be furnished a copy of the procedures and the instructions to be followed when determining the clearance is complete and safe. The forms will be supplemental to the project log books and maintained as a permanent record. When a project or office does not maintain a log book as a permanent record the ENG Form 1927 constitutes the project record of clearance.

27. Danger and Caution Signs. Danger and Caution signs shall be placed at work sites to warn team members or the public of hazardous conditions. All signs must conform to the requirements of the Corps of Engineers Sign Manual.

28. Forms. ENG Form 1927; CEORD Forms 1121R, 1122R, and 1123R; and ORH 2414 (listed as Exhibits B, C, D, E, and F) shall be used and are available from the District Forms Room.

29. Types of Energy Requiring a Clearance.

Electrical	Thermal
Mechanical	Radiation
Hydraulic	Chemical
Pneumatic	Gravity

Exhibit A DEFINITIONS

Affected Person – A team member whose job requires him to operate or use a system on which servicing or maintenance is being performed under lockout or tagout or whose job requires him to work in an area where such servicing or maintenance is being performed.

Authorized Individual – A qualified person who is designated in writing by the responsible official to request, receive, and implement energy control procedures.

Electrical Equipment – Any device which produces, consumes, stores, transmits, or converts electrical energy.

Electrical Line – Any conductor used in the transmission of electrical energy from one point to another.

Energy Control Procedure – The overall written procedure (including responsibilities, procedural steps for lockout and tagout, and requirements for testing the effectiveness of energy control measures) to be utilized for the control of hazardous energy.

Energy Control Program – The written program consisting of energy control procedures and team member training. Team member training shall be both initial and periodic. The purpose of the training is to ensure that the purposes and functions of the energy control program are understood by all affected personnel and to provide the knowledge and skills required for the safe application, usage, and removal of energy controls.

Energy Isolation Device – A physical device that prevents the transmission or release of energy. Includes, but is not limited to, manually operated circuit breakers, disconnect switches, slide gates, slip blinds, line valves, blocks, or similar devices, capable of blocking or isolating energy, with a position indicator. The term does not include push buttons, selector switches, and other control circuit type devices.

Energy Source – Includes electrical, mechanical, hydraulic, pneumatic, chemical, thermal, nuclear, gravity, stored, or other energy.

Full Personnel Protection – When a tagout device is used in place of a lockout device, full personnel protection is provided when (1) the tagout device is attached at the same location that the lockout device would have been attached, (2) all tagout-related requirements of this regulation have been complied with, and (3) additional

means have been taken to provide a level of safety commensurate with that of a lockout device. Such additional means include the removal of an isolating circuit element, blocking of a control switch, opening and tagging an extra (separated by distance) disconnecting device, or the removal of a valve handle to reduce the likelihood of energization.

Isolation – An activity which physically prevents the transmission or release of energy.

Issuing Individual – A team member, qualified by his knowledge of the type and magnitude of the energy, the hazards involved, and the methods or means to control the energy, who is authorized by the responsible official to issue safe clearances. The issuing individual is a team member with jurisdiction over an area or project, e.g., he/she may be the project manager, lockmaster, maintenance leader, maintenance mechanic, or a team member having operational control of systems to be placed under hazardous energy control procedures.

Lockout – A form of hazardous energy control utilizing the placement of a lockout device, in accordance with established procedures, on an energy isolating device to ensure that the energy isolating device and the system being controlled cannot be operated until the lockout device is removed.

Lockout Device – A device that utilizes a positive means, such as a key or combination lock, to hold an energy isolating device in the safe position and prevent the energizing of a system.

Pressure Systems – All pipes, tubing, valves, controls, and other devices which operate or are maintained above atmospheric pressure. Also, see definition of vacuum systems.

Responsible Official – The team leader in charge of the project or facility who designates the issuing and authorized personnel and directs local safe clearance policy and procedures.

Safe Clearance – A definite operating arrangement whereby an authorized individual, acting individually or as a representative of a crew, isolates a system by lockout or tagout. A device or point under safe clearance does not necessarily indicate a zero energy state at that device or point.

Safe Clearance Request Form ENG Form 1927-R –
A form on which requests for safe clearances, safe clearance releases, and all other pertinent data in connection with safe clearances is maintained.

Stored Energy –Energy (electrical, mechanical, pneumatic, etc.) that might be found in a charged capacitor, a loaded spring, pressurized hydraulic lines or air lines, compressed gas cylinders, batteries or other similar hazardous form.

System –Includes machinery, equipment, and electrical, hydraulic, and pneumatic lines and their subsystems.

Tagout – A form of hazardous energy control procedure utilizing the placement of a tagging device, in accordance


with established procedures, on an energy isolating device to indicate that the energy isolating device and the system being controlled may not be operated until the tagout device is removed.

Tagout Device – A prominent warning device, such as a tag with a means of attachment, which can be securely attached to an energy isolating device in accordance with established procedures to indicate that the energy isolating device and system being controlled may not be operated until the tagout device is removed.

Vacuum Systems – All pipes, tanks, tubing, valves, controls, and other devices which operate or are maintained below atmospheric pressure.

Exhibit C

DANGER
DEPARTMENT OF
THE ARMY



**DO NOT
OPERATE**
CORPS OF
ENGINEERS

MAIN HOLD CARD

STATION _____

CLEARANCE NO. _____ CARD NO. _____

CLEARANCE ON _____

ISSUED TO _____

ISSUED BY _____

DATE _____ TIME _____

AUXILIARY CARDS PLACED AT

CARD NO.	PLACED BY	LOCATION	REMOVED BY
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			

(FOR PLACEMENT OF GROUNDS SEE BACK)


CEORD
Form 1122R
1 Mar 92

PREVIOUS EDITIONS
MAY BE USED

(ER 385-2-31)

(front)

DANGER



**DO NOT
OPERATE**

AUXILIARY HOLD CARD

CLEARANCE NO. _____ CARD NO. _____

PLACED BY _____ TIME _____

ISSUED TO _____

EQUIPMENT HELD _____

MAIN CARD ONLY

GROUNDS PLACED AT

(back)

(Color of card will be red)

Exhibit D

ENG FORM 1927-R

LOCATION	CORPS OF ENGINEERS SAFE CLEARANCE REQUEST FORM ER 385-1-31		DATE
			TIME
CLEARANCE NO.		CLEARANCE COMPLETED BY	
SYSTEM AND HAZARDS TO BE CLEARED			
PURPOSE OF CLEARANCE			
CLEARANCE REQUIRED BY (NAME/TITLE)		TIME	DATE
POINT OF CONTACT/LOCATION			PHONE
ESTIMATED TIME OF COMPLETION		ESTIMATED TIME TO RETURN EQUIPMENT TO SERVICE IN EMERGENCY	
TIME			
PROCEDURAL STEPS FOR SHUTTING DOWN, ISOLATING, AND TAGGING SYSTEMS TO CONTROL HAZARDOUS ENERGY			
SAMPLE			
PROCEDURAL STEPS AND RESPONSIBILITIES FOR PLACEMENT, REMOVAL, AND TRANSFER OF LOCKOUT/TAGOUT DEVICES			
FOR ILLUSTRATION PURPOSES ONLY (Local reproduction authorized - blank masters available from local FMO)			
PROCEDURAL STEPS FOR PLACING AND TAGGING, AND MOVING OR REMOVING AND UNTAGGING, PROTECTIVE GROUNDS			
REQUIREMENTS FOR TESTING THE SYSTEM TO VERIFY EFFECTIVENESS OF ISOLATION AND LOCKOUT/TAGOUT DEVICES			
MEANS TO ENFORCE COMPLIANCE WITH PROCEDURES			
AUTHORIZED EMPLOYEE		ISSUING EMPLOYEE	
CLEARANCE ISSUED TO	TIME	DATE	BY
CLEARANCE RELEASED BY	TIME	DATE	DATE
CLEARANCE REMOVED BY	TIME	DATE	DATE

Exhibit F

[illegible]

APPENDIX R

Medical Surveillance Vision Screening Program for VDT Operators

1. Purpose.

a. To establish a comprehensive occupational vision screening program for VIDEO Display Terminal (VDT) operators.

b. To ensure efficient visual performance at the special working distance of VDT screen placement through initial and triennial vision screening for team members who devote 20 hours or more per week to VDT use.

c. To provide complaint oriented vision screening for casual VDT users.

2. References. SGPS-PSP-O, Memo dtd 15 Dec 89
AR 40-5, Preventive Medicine
TB MED 506, Occupational and
Environmental, Occupational
Division
AR 42-2, Army Medical Treatment
Facilities General Administration
U.S.A.E.H.A., TG 156, Questions
and Answers on Video Display
Terminals

3. Applicability. This vision screening program for video display terminal operators includes all Huntington District team members who devote 20 hours or more per week to VDT use. Casual VDT users who develop persistent eye complaints when operating VDT equipment may also receive screening for possible vision problems.

4. Responsibility.

a. The District Commander will ensure compliance with the visual screening program.

b. The Safety and Occupational Health Office will assist and advise team leaders in providing ergonomically correct VDT work stations, provide prescreening and triennial visual screening, causal vision screening, VDT site surveys, and provide assistance in training and developing engineering controls. The District Health Unit will assist team leaders in identifying and approving vision testing facilities and contract elements such as vision screening and reports; designate vision standards.

c. Team leaders will identify and schedule personnel for VDT prescreening, causal and triennial prescreening. The team leaders will promote maximum efficiency

through establishment of ergonomically sound work stations, ergonomic and appropriate training for VDT use.

d. Team members are responsible for properly utilizing VDT guidelines such as proper ergonomic utilization of VDT, work breaks from VDT, and completion of vision screening at appropriate intervals.

5. General. The VDT Screening Program is an essential part of the total Occupational Health Program. It's fundamental purpose is to promote maximum VDT efficiency through prescreening, causal, and triennial vision screening and ergonomically current VDT work practices.

6. Video Display Terminal Surveys.

a. The District Safety and Occupational Health Office will conduct and document VDT terminal site surveys when there is reason to suspect an ergonomically related problem.

b. VDT worker voices eye complaints that may be consistent with VDT use such as, eye fatigue, squinting, and headaches.

c. If any of the noted conditions occur, the team leaders should immediately notify CEORH-SO. The District Safety and Occupational Health Office will conduct a survey of the potential hazards within 15 days.

7. Recordkeeping. Records of VDT surveys will be maintained by the District Safety and Occupational Health Office and by each office/project surveyed.

8. VDT Site Controls.

a. Conditions identified during site surveys must be controlled by engineering methods where feasible. Engineering controls can include but not limited to any one or combination of the following: enclosures, equipment modification, dimming overhead lights, etc.

b. During equipment procurement, every effort should be made to purchase only ergonomically advised equipment for VDT.

c. Special Purpose Glasses: VDT may require special purpose glasses if team member needs bifocals, trifocals or reading glasses. The VDT vision prescreen

will determine if a professional eye examination is needed. When indicated, the following measurements should be taken to the eye practitioner:

- (1) Distance from eye to screen
- (2) Distance and location of document holder
- (3) Distance from eye level to top of screen

9. Vision Screening Parameters For VDT Operators.

a. Personnel who will be placed in the VDT Screening Program are those who devote 20 hours or more per week to VDT use. Casual operators who develop persistent eye complaints when operating VDT equipment will also be screened for possible vision problems.

b. VDT operators will be referred for a complete eye examination when they fail to meet the vision screening parameters listed below. The examination is at team members expense, not government.

- (1) Visual acuity (corrected)
Near – 20/25 each eye
Distance – 20/30 each eye
VDT Distance – 20/25 each eye

(2) No Esophoria – at near. Esophoria may be identified as deviation of the visual axis of one eye toward the other eye after the visual fusion stimuli have been eliminated.

(3) No Exophoria beyond 15 diopters – at near. Exophoria may be defined as deviation of the visual axis of one eye away from the other eye in the absence of visual fusion stimuli.

(4) No Vertical Phoria greater than 1/2 prism diopter measured at distance or near. Vertical Phoria may

be defined as the tendency of the eyes to misalign upward or downward.

c. Intermediate distance may be defined as the distance from the operator's eyes to the VDT screen. This distance should be measured (in inches) before the vision screening is performed. This measurement will permit occupational health personnel to select the intermediate test lens for evaluation of the "working distance" visual acuity.

d. U.S. Army Environmental Hygiene Agency Technical Guide (TG) 156 "Questions and Answers on Video Display Terminals," latest issue August 1987, is available to provide guidance for team members and team leaders. Any questions or requests for TG-156 should be directed to CEORH-SO.

10. Contract Elements. For those VDT Vision Screens done at a place other than the District Health Unit the above noted vision screening parameters for VDT operator will be used along with the following requirements:

a. Requests for team member VDT Vision Screening will be itemized as noted in Vision Screening Parameters for VDT operators B1 through 4.

b. A VDT Vision Screen Report with interpretation and recommendations will be provided to the District Health Unit.

VDT Vision Screen Reports

a. The Health Unit will send fitness reports to the team leaders and to the team member.

b. VDT Vision Screen records will be maintained in the team member's medical folder in the District Health Unit. Records will be provided to team members upon request.